

STATE ASSESSORS BOARD

Mandatory Certification Renewal Program

**Land Values, Land Value Maps, and
Economic Condition Factors**

2008-2011 Renewal Periods

PROGRAM CONTENT

This is one of three mandatory six-hour renewal programs assessing officers must complete by September 30, 2011. It is an expansion of one of the two-hour segments from the mandatory six-hour certification renewal program adopted by the State Assessors Board for the 2007-2008 renewal period. This program covers the development of land values, land value maps, and economic condition factors by assessing officers.

The initial two-hour segment on these topics was relatively simple due to time constraints. This six-hour program will cover similar simplistic material, but it will also cover more difficult assessing situations which assessing officers commonly encounter. After completing this program, assessing officers should (1) have the necessary knowledge to determine and correctly apply land values to individual parcels on an assessment roll, (2) have an understanding of what land value maps are and how to create them, (3) have the knowledge needed to calculate and apply economic condition factors (ECF), and (4) have a reliable reference resource for use in preparing assessment rolls and equalization studies. This renewal program will focus on the following specific topics:

- ❖ The various land value development methods
- ❖ Land value maps
- ❖ Presentation of example land value maps and land value data
- ❖ ECF computation and application

THE NEED FOR LAND VALUE AND ECF DEVELOPMENT TRAINING

Since 2002 the State Tax Commission has used a standardized 14-point review process to evaluate the assessing practices in the state as regards compliance with the General Property Tax Act and Commission rules. More recently, the Commission has used an abbreviated review process (i.e., “mini-reviews”) to evaluate assessing practices in the state. Unfortunately, the rate of failure for the random 14-point reviews which have been conducted has hovered around 35 percent and the failure rate for mini-reviews has been around 30 percent. **A lack of land value maps with current land values and a lack of current ECF determinations have been cited by the Commission as two primary reasons for the 14-point review failure rate.** These items have also been found to be inadequate in mini-reviews. Additional training on these subjects is warranted.

site for this quiz: http://www.michigan.gov/documents/treasury/Quiz_271723_7.pdf

SALES VERIFICATION

Since land value analysis and ECF development depend on the use of sales information, a discussion of sales verification is warranted before entering into a discussion of land valuation methods, land value maps, and ECF determination.

The number of sales selected should be sufficient to set a pattern when performing land value or ECF analysis. Similarities and dissimilarities between subject and comparable properties must be recognized and handled appropriately.

Market Price vs. Market Value

Most of us are aware of the differences in 'price' and 'value' in the context of following sales, in that one price does not equal true cash value. However, here we are focusing on additional differences between 'price' and 'value'.

Many believe that before a sale may be used as an indicator of market value, it must meet the following criteria:

- It must be a sale on the open market.
- Neither party may enter into the sale under duress.
- A reasonable time must be allowed for selling the property (i.e., exposure on the open market).
- Both buyer and seller must be reasonably knowledgeable.
- Consideration should be in cash or its equivalent.

We agree that these are certainly desirable characteristics for any sale. However, these are the 'presumed' or 'normative' characteristics of 'market value', not 'market price', and may be absent from a sale or 'market price'.

All major appraisal text books have a discussion of 'price' vs. 'value'. One of the more detailed discussions that some will find surprising is found on page 7 of Appraising Real Property, 7th printing. It reads in part:

"In an actual sales transaction, the parties involved are not necessarily informed, nor do they act rationally, free from pressure, or at arm's length (independently). Market price does not have to be justified, as does market value. Financing terms may be unique or may vary widely from typical market practice. The entire transaction does not have to be typical."

This means that to be considered, a sale need not necessarily be offered for sale on the open market, the sellers and buyers do not have to act with perfect prudence, etcetera. The idea is that out of all these sales, with their possibly erratic terms and conditions, somewhere in the center is value (with all its presumptions).

Another central idea is that **all sales should be considered** for a study, unless there is a specific reason to exclude them. Recognizing this idea, the State Tax

Commission (STC) adopted a list entitled Assessment/Sales Ratio Guidelines. The list has three categories 'General Considerations', 'Sales Usually Included In Assessment/Sales Study', and 'Sales Usually To Be Deleted From An **Unverified** Sales Study'.

The Assessment and Certification Division (ACD) staff uses these guidelines in conducting sales ratio studies. In the following rendition, some guidelines have been modified for use with appraisal studies (in determining land values and ECFs), rather than sales ratio studies. The criteria should be kept in mind while verifying sales information, as should Michigan Compiled Law (MCL) 211.27, which defines "true cash value" for property tax purposes and contains the phrase "the usual selling price". This section of the law is reproduced in the addendum.

It is crucial that sales information be verified before it is used to determine land values or ECFs.

General Considerations¹:

- Sale prices obtained from any source may be used.
- Transfer instruments should be screened for details that indicate other than a usual selling price.
- The most recent sale will usually be listed in the case of more than one sale of the same property in a single year (i.e., April 1 to March 31).
- Sales will not be excluded just because it is alleged the buyer paid too much or perhaps was not fully informed. There must be some support that a particular buyer was an "uninformed buyer".
- In most circumstances, developers' lot sales must be listed.
- The remaining unpaid balance of a special assessment that has been assumed by a grantee should be added to the stated sale price. The same applies to other assumed liens or obligations that directly involve the real property, such as back taxes.
- Lot sales involving building demolition should have demolition costs added to the sale price where the goal is to get a vacant site value.
- Unlike a sales study, for sales used in an appraisal study (LVs, ECFs & comparable sales) 'most probable use', rather than classification, determines whether a sale should be considered. However, the subject classification determines the study in which the subject appraisals are used.

¹ Based on a document of the Michigan Department of Treasury titled "Property Tax Division Assessment/Sales Ratio Study Guidelines", some guidelines not pertaining to vacant land or ECF analysis have been removed.

Sales Usually Included In ... Study

- The following types of sales may be good indicators of value:
 - Sales by warranty deed
 - Sales by land contract, or purchaser assignments of land contract
 - Sales involving mortgage assumptions where the total price is stated, or where the mortgage amount assumed and the amount paid down on the mortgage are both known
 - Sales transferring property in its entirety by partial interest
 - Sales involving splits may be used to establish land values and ECFs
 - Sales, where the condition and/or extent of improvements on tax day was different than on the date of sale, can be used as long as the terms and condition as of the sale date are taken into account
 - Some sales involving full or partial exemption may be used after verification
 - Land contracts with unusual circumstances, such as low interest or no down payment should be considered creatively financed, included in the study, but analyzed in the manner set forth in the STC Bulletin 11, 1985.

Sales Usually To Be Deleted From An Unverified... Study

- The following types of sales should generally not be used in determining land values or ECFs:
 - Quit claim deeds
 - Deeds of an administrator or executor
 - Sheriff's deeds
 - Tax deeds
 - Family sales
 - Sales with life lease or life estate
 - Sales from or to public and quasi-public government (taxpayer) funded bodies, such as State, county, schools, and similar agencies
 - Sales from and to lending institutions where the bank held a mortgage on the property (However, due to market conditions in Michigan, new guidelines have been implemented regarding foreclosures. See State Tax Commission Bulletin No. 6 of 2007 in the addendum for these foreclosure guidelines. Also, sales where the bank is acting as a trustee for a private trust and the sale is a normal sale for the benefit of the trust should be considered.)
 - Transfer instruments referring to a prior sale between the seller and buyer of this property (e.g., the fulfillment of a 1990 land contract)
 - Deeds with mortgage assumptions where the mortgage balance or total price is unknown
 - Sales with new deed restrictions that significantly reduce the sale price (e.g., a situation where all of the development rights in a parcel were deeded earlier in the year to an exempt organization and the seller deeds the remaining rights to a third party for a nominal price) should not be compared to unencumbered properties. However, these sales may be the best indicators of value for properties with similar deed restrictions.

- Sales that include a significant or unknown value for exempt property, such as seawalls or Christmas trees
- Transfer instruments with odd dollar considerations, such as \$11,273 or \$17,129.38 (After verification, however, some sales with odd dollar amounts may be used. For example, a parcel sold for \$48,562.50. On verification it was discovered that the 52.5 acre parcel sold for \$925 per acre with no unusual circumstances. Another example would be a parcel that sold for \$48,562.50 and on verification it was discovered that the buyers paid the sellers \$10,000 cash and paid off the sellers' \$38,562.50 mortgage balance.)
- Sales conditioned on a change of some documented contingency, such as rezoning or restrictions that are part of the public record should not be compared with properties that do not have the same zoning or restrictions as the post-sale property. However, the sale properties may be good comparable sales for properties with the same zoning etc. as the post-sale property.
- Deeds conveying significant, provable, amounts of personal property together with the real estate
- Sales with conveyance of a partial interest, such as undivided 1/4 interest, sale of leased fee, etc., unless the entire property is conveyed
- Conveyance where there is a common interest relationship between the grantor and the grantee such as where a corporation sells to an officer of the corporation.

HIGHEST AND BEST USE ANALYSIS

Highest and best use is defined as “the reasonably probable and legal use of vacant land or an improved property that is physically possible, legally permissible, appropriately supported, financially feasible, and that results in the highest value.”¹ A discussion of highest and best use analysis is also considered warranted before discussing land valuation methods or ECF determination. **Reaching a conclusion about a parcel’s highest and best use is fundamental in determining the parcel’s market value. In fact, it is critical that highest and best use be considered in developing land values and ECFs.** Using sales of parcels with a highest and best use as a regional shopping center to value vacant tillable land with a highest and best use of farmland would result in erroneous value conclusions. Likewise, developing an ECF for parcels in a single-family residential neighborhood using sales of improved commercial parcels would also be incorrect. Accordingly, a basic discussion of highest and best use analysis is warranted at this point in the program.

In addition to the test of being reasonably probable, a parcel’s highest and best use is determined using four tests. The four tests are done in order, first of the parcel as vacant and then of the parcel as improved. The four tests used to conclude what the highest and best use of a parcel is are (1) physically possible, (2) legally permissible, (3) financially feasible, and (4) maximally

¹ *The Appraisal of Real Estate*, Twelfth Edition, page 305.

productive. Each test may eliminate uses that are not appropriate or possible for the parcel being appraised. A brief discussion of these four tests follows.

PHYSICALLY POSSIBLE

This first test determines how a site can be physically used. The appraiser should explore and make determinations regarding the following property characteristics:

- a) Topography
- b) Soil conditions
- c) Subsurface and surface water
- d) Land size
- e) Land shape
- f) Slope
- g) Climate (if it would effect the business operation)
- h) Natural hazards (floods, earthquakes, hurricanes, etc.)
- i) Off-site utilities
- j) Accessibility

This first test may eliminate some uses of the parcel. The appraiser then takes the remaining uses and moves to the next highest and best use test.

LEGALLY PERMISSIBLE

The second test of what is legally permissible considers legal restrictions on the use of a parcel. The appraiser should explore and consider the following matters:

- a) Zoning & Ease of Rezoning
- b) Private restrictions
- c) Easements
- d) Leases
- e) Government restrictions (building codes, historic district controls, etc.)
- f) Subdivision restrictions

When considering the test of legal permissibility, a parcel's zoning is often the most important issue. Zoning research should include permitted uses, setbacks (for side, front, and rear yards), building height limitations, density specifications, parking requirements, building coverage ratios, and construction style restrictions. The possibility of zoning changes should also be considered. After conducting this second test, the appraiser takes the uses that have not been eliminated from consideration and proceeds to the third test.

FINANCIALLY FEASIBLE

The third highest and best use test is financial feasibility. Once the first two tests are completed, the field of possible uses is usually narrowed considerably. The third test is then applied to the

remaining possible uses. If a remaining potential use has value matching its costs, the use is considered to be financially feasible (i.e., it makes sense economically).

MAXIMALLY PRODUCTIVE

Maximum productivity is the last highest and best use test. Again, this test is applied to the surviving potential uses after application of the first three tests. Of the surviving possible uses, the highest and best use is the use that produces the highest rate of return. For additional information on highest and best use analysis, the reader is directed to the most recent edition of *The Appraisal of Real Estate* by the Appraisal Institute.

LAND VALUES

An assessor is responsible for estimating a land value for every taxable parcel of property which is valued using the cost approach to value in the assessment jurisdiction. Typically, land values are not obvious for a given area or neighborhood. Even so, the assessor must develop land values for assessment purposes. Similarly, County equalization departments must also establish land values to appraise parcels included in equalization appraisal studies.

In establishing land values, the appraiser should consider the general forces (economic, social, environmental, and governmental) that affect the parcels' value. Environmental forces include the parcels' physical characteristics. It is critical to give adequate consideration to the physical characteristics of the parcels' land. These characteristics include location, size, view, frontage on a lake or river, topography, shape, existing vegetation, soil (whether the soil perks, etc.), available utilities, and unusual site preparation costs. Important governmental forces to consider include zoning restrictions and deed restrictions.

Several methods are available to an assessor or an equalization department for the land valuation process. These methods include the sales comparison, allocation, extraction, and subdivision development methods, as well as several income capitalization techniques. With sales verification and highest and best use analysis previously covered, the sales comparison method, the allocation method, and the extraction method can be discussed.² A discussion of the subdivision development method will also be presented. **It is important to note that land values should generally be applied as calculated and an assessor or equalization director should be prepared to explain any departures from the calculated land values.**

SALES COMPARISON METHOD

Using the sales comparison method, information regarding sales of similar vacant land is collected, verified, analyzed, and adjusted to yield an indication of value for the property being appraised. The first step in land valuation is the collection of vacant land sales data. Verification of sales information is essential before recording the information on maps or in a

² The discussion of these three methods is based in part on *The Appraisal of Real Estate*, Twelfth Edition, pages 337 through 341.

spreadsheet format for analysis as part of the mass appraisal process (or in a standard adjustment grid in single-property applications).

In analyzing data, it is important for an assessing officer to compare the characteristics of sold parcels such as location, highest and best use, size, etc. In mass appraisal situations, this allows the vacant land sales to be grouped based on similar characteristics and the assessing officer may then assign land values derived from the grouping to subject properties sharing similar characteristics with the group.

It is also an important part of the analysis for the assessing officer to use an appropriate *unit of comparison*. Common sense coupled with an analysis of the sale data will often suggest the appropriate unit of comparison. **The square foot is the most widely used unit of comparison for land valuation.** Because it is an area measurement, it considers all the land in a parcel. As such, it can be used to value any and all types of land. For example, commercial and industrial property values typically are based on the square foot as the unit of comparison. The square foot, as a unit of comparison, is especially adapted for valuing parcels with irregular shapes. Surplus land (i.e., land area above the typical land-to-building ratio for a parcel) may have a lesser square foot value than the rest of the parcel.

For residential properties, value per front foot, value per square foot, or value per acre may be the best unit of comparison. When using front foot values, it is necessary to consider a depth factor (the use of depth factors is covered extensively later in this program). “Frontage” is the lineal distance that a lot (usually referring to an urban or suburban lot) borders on a street or water, and is typically expressed in feet. Site or lot values are another option for residential properties, especially in platted subdivisions. Agricultural land is typically valued on a per acre basis. The acre is used as a unit of comparison when valuing large land areas (e.g., farms, pastures, timber lands, recreational lands, etc.).

Selecting the proper unit of comparison is important in gaining an understanding of how the market is behaving. Conversely, selection of an inappropriate unit of comparison can lead to faulty appraisal results. For example, it would generally not be a good idea to use front foot values to appraise land which has a highest and best use of agricultural.

In the mass appraisal process, whichever unit of comparison is selected, the assessing officer must also give consideration to adjustments for positive or negative influences in setting the land value for a parcel. Influences which are unusual for a neighborhood should receive adjustments if the market recognizes those influences. Influences such as corner lots in residential settings, high traffic volumes (generally a positive influence for commercial parcels but generally a negative influence for residential parcels), unusual shape, unusual topography, nearby nuisances, etc. should be given consideration for possible adjustment. To the extent possible, adjustments should be derived from the market. For example, the market would likely recognize that a parcel in a residential area that has an unusual formation of bedrock just beneath the surface of the land (which would prevent a normal basement from being constructed) is worth less than normal for the neighborhood. In such a case, an assessing officer should endeavor to determine an appropriate negative adjustment from available sales information and apply that adjustment to the neighborhood’s front foot rate (or square foot rate or site value) for the affected parcel.

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Regardless of the unit of comparison that is selected for use, it is important to note that **land lying under a public road right-of-way is exempt and should not be considered in a parcel's area.** In determining a parcel's value per acre, for instance, the area under a public road right-of-way is not to be included in the parcel's area. Land areas must be calculated net of any public road right-of-way.

A table is provided below containing (hypothetical) vacant land sales information compiled in a mass appraisal situation. The information shown has been collected, verified, analyzed, and sorted by surface area (size). In this case, the selected unit of comparison was value per square foot. This information has been developed to the point where a conclusion of value could easily be drawn and then applied to a group of subject properties with a highest and best use of office, a land area of roughly 90,000 to 110,000 square feet, and a good location in the same assessment unit and local school district in which the vacant land sales occurred. Where possible, vacant land sales information such as this should be developed and maintained by category of property to be appraised by a local assessment unit or an equalization department. (In practice the table would likely contain additional information such as parcel number, grantor, grantee, liber and page, adjusted sale price, etc.)

SALE DATE	SALE PRICE	AREA (IN SQUARE FEET)	SALE PRICE PER SQUARE FOOT	COMMENTS
1/27/2008	\$363,700	88,712	\$4.10	Good Location/Future Office Site
10/3/2007	\$373,600	90,019	\$4.15	Good Location/Future Office Site
2/10/2008	\$370,000	91,814	\$4.03	Good Location/Future Office Site
8/15/2007	\$405,000	100,988	\$4.01	Good Location/Future Office Site
12/8/2007	\$412,900	101,954	\$4.05	Good Location/Future Office Site
11/22/2007	\$417,700	108,490	\$3.85	Good Location/Future Office Site
10/14/2007	\$424,100	111,598	\$3.80	Good Location/Future Office Site
5/14/2007	\$428,400	113,944	\$3.76	Good Location/Future Office Site

Difficult Situations

The hypothetical information provided above for purposes of discussion is extremely uniform and logical in nature. In a real world setting, such a high degree of uniformity and logic is rare. An assessing officer establishing land values often must deal with difficult or confusing sales information. It can be common for sales information to contain outliers, which are values that lie outside the range of values formed by the majority of other sales. Another common problem is for the sales information to appear not to lead to a logical conclusion. Or it may be that there is a lack of sales information. Assessing officers must deal with all of these difficult situations when valuing land.

Treatment of Outliers

The chart containing vacant land sales information used earlier has been reproduced as follows with the addition of two outlier sales (shown in bold print).

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SALE DATE	SALE PRICE	AREA (IN SQUARE FEET)	SALE PRICE PER SQUARE FOOT	COMMENTS
1/27/2008	\$363,700	88,712	\$4.10	Good Location/Future Office Site
10/3/2007	\$373,600	90,019	\$4.15	Good Location/Future Office Site
10/25/2007	\$495,700	90, 129	\$5.50	Good Location/Future Office Site
2/10/2008	\$370,000	91,814	\$4.03	Good Location/Future Office Site
8/15/2007	\$405,000	100,988	\$4.01	Good Location/Future Office Site
12/8/2007	\$412,900	101,954	\$4.05	Good Location/Future Office Site
1/30/2008	\$303,850	103,000	\$2.95	Good Location/Future Office Site
11/22/2007	\$417,700	108,490	\$3.85	Good Location/Future Office Site
10/14/2007	\$424,100	111,598	\$3.80	Good Location/Future Office Site
5/14/2007	\$428,400	113,944	\$3.76	Good Location/Future Office Site

The sales are considered outliers because their sale prices per square foot from the transactions lie well outside the range of values formed by the other sales information. Under such circumstances, use of the outlier sales information may lead to faulty results. **Observation of outlier sale values should cause the assessing officer developing land values to give additional scrutiny to the outlier sales.** Often there will be a reason for the divergent sale price that will be revealed by additional investigation on the part of the assessing officer. If, for instance, additional investigation showed that the buyer and seller involved in the sale for \$2.95 per square foot were business partners and the reduced price was due to their business association, it would be appropriate to remove that sale from the analysis. Generally speaking, unexplained outlier sales should be given little weight in determining land values. For example, after removing the sale for \$2.95 per square foot from the above analysis, the outlier sale for \$5.50 per square foot remains. If additional scrutiny did not reveal a valid reason to remove that sale from the analysis, the sale may remain in the chart, but it would be unwise to accord that unadjusted sale much weight in reaching a land value conclusion. In fact, the assessing officer may wish to remove it from the analysis.

However, additional scrutiny of the outlier sale may reveal additional information that missed in the preliminary analysis, such as, it sold for less due to an environmental problem, or it sold for more because it was part of an assemblage. This additional information may be cause for adjustment (assist in its calculation), may be cause to remove the sale from this analysis, or may turn out to be your best comparable sale for properties with similar characteristics.

Treatment of Confusing Sales Information

The following is a chart containing hypothetical residential vacant land sales information. All of the sales information comes from the same residential subdivision and the same time period (and assume for this example that the lots all have the same depth). Based on this initial analysis, it would be difficult to form a conclusion regarding the proper values per front foot to use to value property in the subdivision. Consider, for instance, the four indicated values per front foot for

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lots having 85 feet of frontage: \$547, \$550, \$625, and \$647. Additional analysis is needed to form a conclusion regarding the appropriate front foot values to use.

SALE DATE	SALE PRICE	FRONT FEET	SALE PRICE PER FRONT FOOT	COMMENTS
2/27/2008	\$45,000	75	\$600	Residential Site
8/13/2007	\$55,000	75	\$733	Residential Site
11/25/2007	\$56,000	75	\$747	Residential Site
1/10/2008	\$46,400	80	\$580	Residential Site
6/6/2007	\$54,000	80	\$675	Residential Site
10/8/2007	\$47,000	80	\$588	Residential Site
2/30/2008	\$46,500	85	\$547	Residential Site
10/29/2007	\$46,750	85	\$550	Residential Site
7/14/2007	\$53,125	85	\$625	Residential Site
5/15/2007	\$55,000	85	\$647	Residential Site

With additional research, the appraiser finds that a local school district boundary cuts through the residential subdivision in question. With this additional piece of the puzzle in place, a definite pattern emerges from the data, as shown below. School district B is clearly more desirable than school district A and the assessing officer can use the information below to establish reliable front foot rates for lots within the subdivision in question. **The important point to remember from this example is that, with additional analysis, confusing data can be turned into meaningful information.**

SALE DATE	SALE PRICE	FRONT FEET	SALE PRICE PER FRONT FOOT	COMMENTS
2/27/2008	\$45,000	75	\$600	Residential Site/School District A
8/13/2007	\$55,000	75	\$733	Residential Site/School District B
11/25/2007	\$56,000	75	\$747	Residential Site/School District B
1/10/2008	\$46,400	80	\$580	Residential Site/School District A
6/6/2007	\$54,000	80	\$675	Residential Site/School District B
10/8/2007	\$47,000	80	\$588	Residential Site/School District A
2/30/2008	\$46,500	85	\$547	Residential Site/School District A
10/29/2007	\$46,750	85	\$550	Residential Site/School District A
7/14/2007	\$53,125	85	\$625	Residential Site/School District B
5/15/2007	\$55,000	85	\$647	Residential Site/School District B

Treatment of a Lack of Sales Information

In many situations, an assessing officer setting land values will be faced with a lack of sales information. For example, an assessor trying to establish land values for tillable land in his jurisdiction may not have any sales within the entire Township during the two-year sales study period. Likewise, a county equalization department trying to create industrial land values may

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not have any industrial vacant sales in the county over the past several years. In difficult situations like these, land values must still be determined and used.

When there is a lack of sales information, such as sales of vacant land, as a last resort, an assessing officer could also consider asking prices to help establish land values. In doing so, it is helpful to understand that actual sale prices are typically a percentage of asking prices. For example, an asking price of \$119,900 might result in an actual sale price of \$110,000. It is important for an assessing officer to know his or her market extremely well when considering asking prices. Asking prices can be used to help support land value conclusions, especially in situations where vacant land sales information is scarce. Opinions from knowledgeable sources such as realtors and fee appraisers may also be used to support land value conclusions drawn by an assessing officer.

Preferable choices in situations where there is a lack of sales information include using sales outside the normal time frame of the sales study period, or using sales from outside the area for which land values are being determined. If sales from outside the normal time frame of the sales study period are used, adjustment for market conditions (i.e., a time adjustment) should be made to bring the sales to the midpoint of the sales study period. If sales from outside the area for which land values are being determined are used, adjustment for location should be made.

The calculations below demonstrate how to determine an adjustment from market data for changing market conditions or time:

Original sale price (two years ago):	\$175,500 (A)
Sale price of same property (present time):	\$182,000 (B)
Change over two-year period ($B \div A - 1 = C$):	.0370, 3.70% (C)
Percentage change per year ($3.70\% \div 2 \text{ years} = D$):	1.85% (D)

This paired-sales analysis indicates a 1.85 percent increase in market value per year for the subject property (this assumes no physical changes to the property, etc. over that time). Using paired-sales analyses like this, an appraiser can determine an appropriate time adjustment and then apply that time adjustment to older sales to supplement existing sales information and determine land values for an area. **It should be kept in mind that a single paired-sales analysis is generally not considered sufficient to justify the adjustment of older sales information to the mid point of the current sales study period.**

Consider the following information to demonstrate how an adjustment for location can be determined from market evidence. Sale 1 is a vacant lot located in subdivision A which has no other vacant land sales. The assessing officer is trying to establish land values for subdivision A. Sale 1 was for \$27,000. Sale 2 is a vacant lot located in subdivision B which is similar to subdivision A. These two vacant lots are similar in all respects except for location. Sale 2 was for \$25,000. The calculations below demonstrate how to determine an adjustment from market data for location:

Sale 1:	\$27,000 (A)
Sale 2:	\$25,000 (B)

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Difference in value due to location ($A \div B - 1 = C$): .080, 8.0% (C)

This paired-sales analysis indicates that subdivision A is 8.0 percent superior in location to subdivision B (i.e., this indicates that the assessing officer should use a multiplier of 1.080 to adjust vacant land sales from subdivision B to arrive at a land value conclusion for subdivision A). Using paired-sales analyses like this, an assessing officer can determine an appropriate location adjustment and then apply that adjustment to sales outside subdivision A to supplement existing sales information and determine land values for subdivision A. Again, a single paired-sales analysis is generally not sufficient to justify the adjustment of sales outside the area in question for location.

Time Adjustment Determination Exercise

The first step in determining a time adjustment is to locate twice-sold parcels, or parcels that are alike in all significant respects except for the date of sale. For twice-sold parcels, it is important to verify that there were no physical changes to the parcel between the sales. Then divide the most recent sale price by the original sale price to determine the overall percentage of change. Lastly, divide the overall percentage of change by the number of time periods between the two sales to determine the percentage change per month or year.

Below are two twice-sold parcels which have been discovered through research. Fill in the blanks. Answers to this exercise are provided in the addendum.

Original sale price (September 1, 1999):	\$225,000 (A)
Sale price of same property (April 1, 2004):	\$305,000 (B)
Percentage change in value between sales ($B \div A - 1 = C$):	_____ (C)
Percentage change in value per month (55 months):	_____ (D)

Original sale price (December 10, 2001):	\$325,000 (A)
Sale price of same property (March 11, 2003):	\$355,000 (B)
Percentage change in value between sales ($B \div A - 1 = C$):	_____ (C)
Percentage change in value per month:	_____ (D)

Additional question: The paired-sales analyses above are of commercial parcels in a given assessing unit. Would it be appropriate to use a time adjustment determined from the above analyses for industrial parcels within that same assessment unit? Why or why not?

Additional question: The paired-sales analyses above are from the time period September 1999 to April 2004. Would it be appropriate to apply a time adjustment determined from the analyses above to a sale that occurred in March of 2004 to bring that sale forward to April of 2007? Why or why not?

Example Land Value Analysis

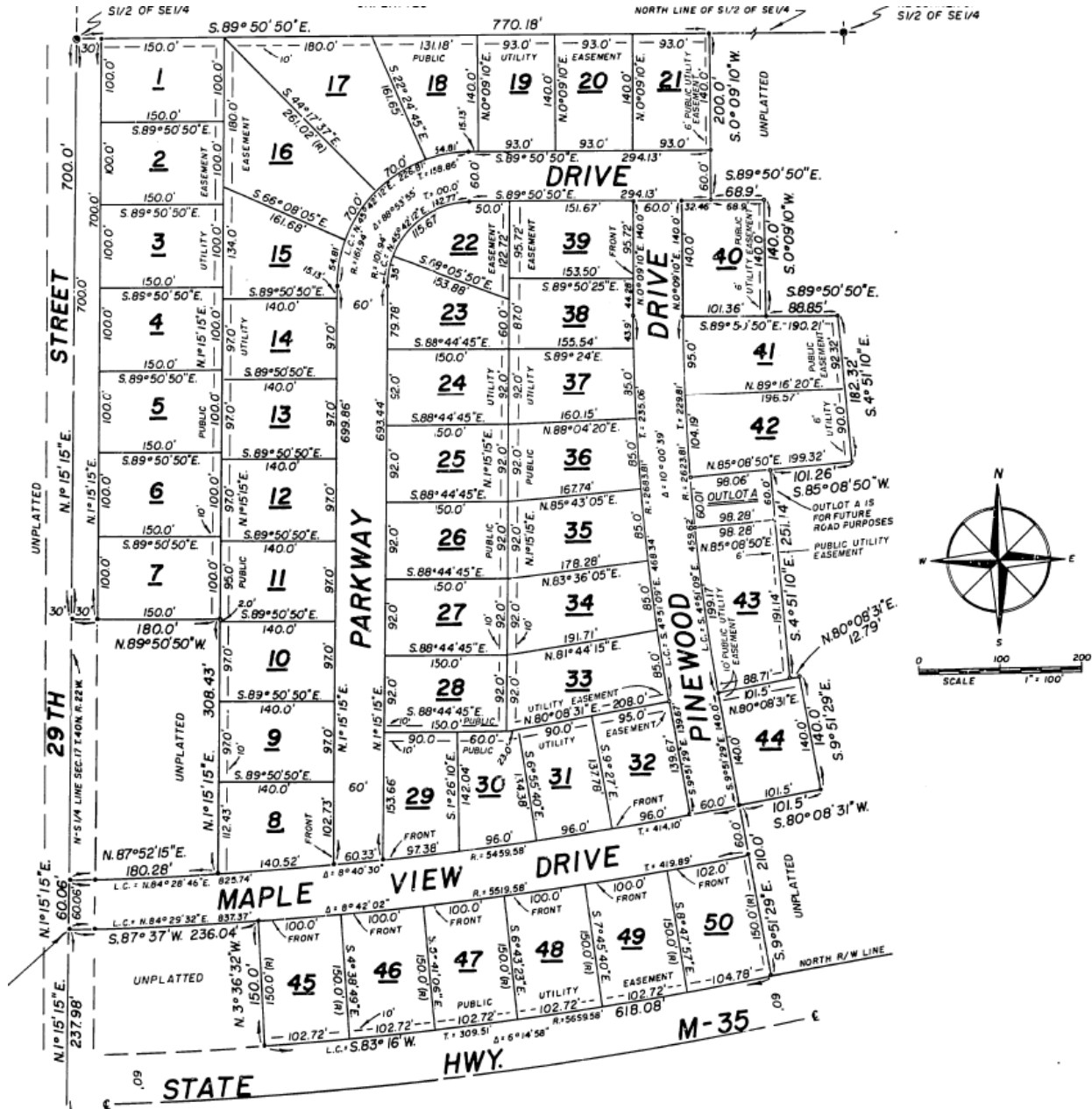
A land value analysis grid and a plat map follow as part of an example land value analysis using the sales comparison approach. In this analysis, several of the lots in the plat have sold and an appropriate analysis (the grid) and resulting conclusions are provided to illustrate how to conduct a vacant land value analysis for a neighborhood. It should be noted that this analysis is for example purposes only and a plat of 50 parcels will not normally be considered large enough for it to be a neighborhood on its own.

EXAMPLE LAND VALUE ANALYSIS GRID								
Lot	Sale Date	Sale Price (SP)	Front Feet (FF)	SP/FF	Square Feet (SF)	SP/SF	Effective FF (EFF)	SP/EFF
1	11-07	\$10,000	100	\$100	15,000	\$0.67	100	\$100
6	2-08	\$9,975	100	\$100	15,000	\$0.67	100	\$100
11	5-07	\$11,000	97	\$113	13,580	\$0.81	94	\$117
12	8-07	\$10,900	97	\$112	13,580	\$0.80	94	\$116
24	9-07	\$10,300	92	\$112	13,800	\$0.75	92	\$112
31	7-07	\$10,500	94 ³	\$112	12,468	\$0.84	89	\$118
37	8-07	\$10,750	87	\$124	13,983	\$0.77	90	\$119
41	1-08	\$12,600	94	\$134	17,815	\$0.71	107	\$118
45	4-07	\$10,000	101	\$99	15,204	\$0.66	101	\$99
46	5-07	\$10,250	101	\$101	15,204	\$0.67	101	\$101

Lots 1, 6, 45, and 46 are on the exterior of the plat and border on major roads (with higher speeds, greater traffic counts, etc.). The lower values of these lots reflect this negative influence. Lots 1, 6, 45, and 46 all have lower values per front foot and per effective front foot. The use of a site or lot value would work well for these lots as well. The remaining lots are all interior lots within the subdivision. The use of lot or site values for these lots would be less than ideal. Also, the sale price per front foot for these lots is less consistent. Using the sale price per effective front foot, however, yields consistent results for all the lots in the subdivision, with the exception of lot 24 which appears to be an outlier and should carry little weight in the analysis. Based on this analysis, a value of \$100 per effective front foot appears appropriate for lots bordering on major roads and a value of \$118 per effective front foot appears to be indicated for interior lots within the subdivision. Alternatively, a rate of \$118 per effective front foot could be used for all the lots with a negative location adjustment (of about \$18 per effective front foot) used to value lots on major roads.

³ If the front of a lot is a different size than the rear, the formula for determining the frontage is as follows: $((2 \times \text{front feet}) + \text{rear feet}) \div 3$. In this case, the front of the lot is 96 feet and the rear of the lot is 90 feet. The calculation for the frontage to use in valuing the parcel is as follows: $((2 \times 96 \text{ feet}) + 90 \text{ feet}) \div 3 = 94 \text{ feet}$. This is based on direction from the State Tax Commission *Assessor's Manual*. The frontages of other lots (37, 41, 45, and 46) in this example are determined in this manner as well.

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When limited sales data are available in a given neighborhood or area, it is sometimes necessary (or helpful) to use alternative methods of land valuation. The allocation method is one such alternative method. In the allocation method, **the assessing officer first determines a typical ratio of land value to total property value (or building value) for the specific type of property being appraised and then infers land value for the subject property or properties by applying that ratio.** This method can be used when sales of vacant land are scarce (or non-existent) in a given area, but where there have recently been sales of improved properties. It is especially applicable in residential appraisal situations. This method is seldom used due to the

difficulty of supporting the *land to property value ratio*. The allocation method is considered less reliable than the sales comparison method.

Assume, for example, that an assessing officer is assigned to place land values on residential lots in a new subdivision A, which has not yet had any vacant land sales activity. Assume further that a second, more established subdivision B is somewhat similar to subdivision A and has had sufficient sales of both vacant and improved land. Using the allocation method, the assessing officer would first analyze vacant land sales in subdivision B and determine their relationship to the improved sales in subdivision B. Based on that analysis, the assessing officer may then be able to draw a conclusion that land values in subdivision B are typically around, say, 25 percent of the sale price of improved properties. The assessing officer could then use that ratio of 25 percent and assign land values to lots in subdivision A based on improved property sales in subdivision A, thus completing the appraisal assignment despite a lack of vacant land sales in subdivision A.

To illustrate the completion of the hypothetical appraisal assignment from the preceding paragraph, assume an improved sale occurred in subdivision A with a sale price of \$350,000. The assessing officer would multiply that sale price by 25 percent ($\$350,000 \times 0.25$), yielding an indicated land value of \$87,500.

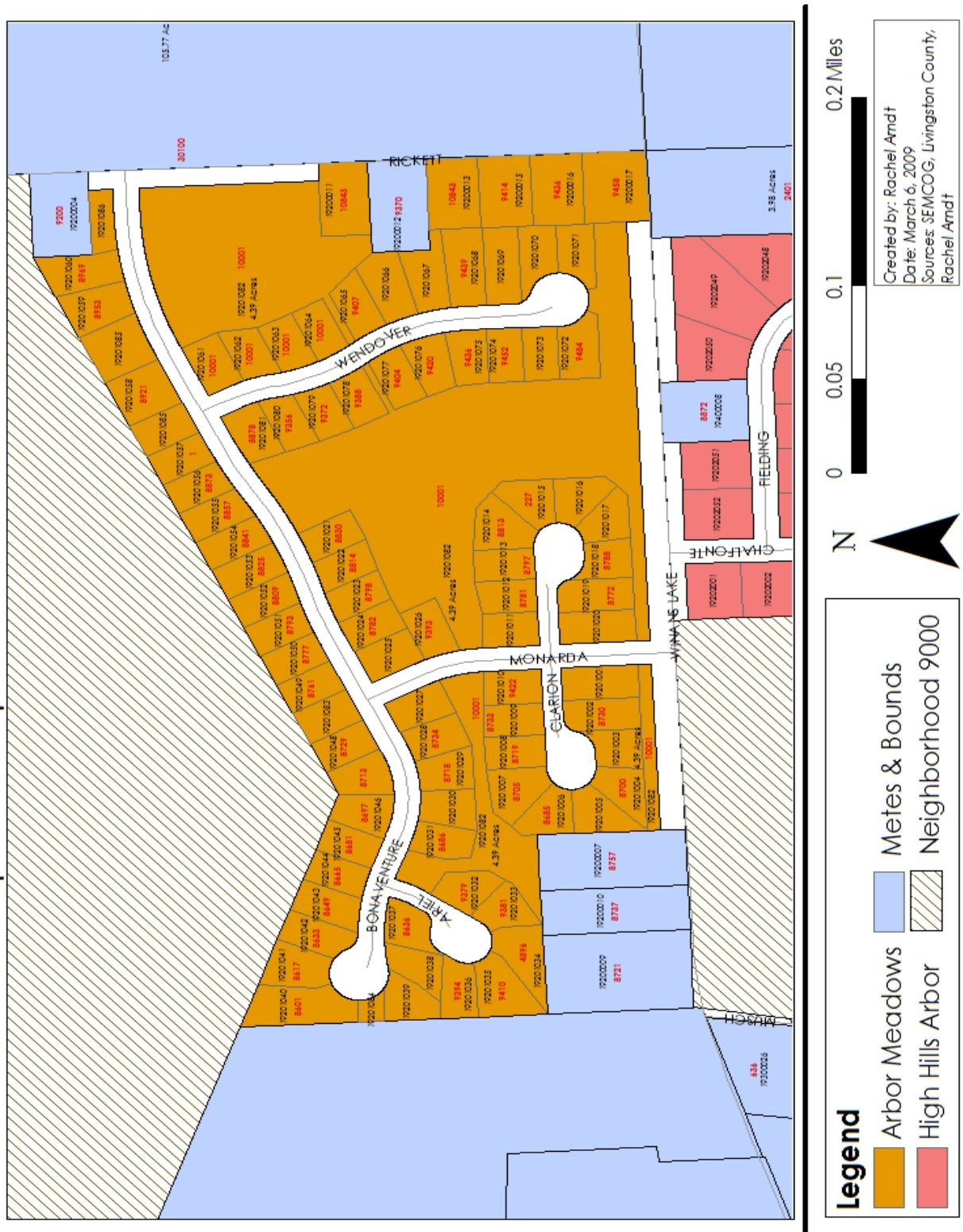
Example - Land Value Analysis

The following map is of a portion of an example neighborhood. An example land value analysis for this neighborhood using the allocation method is presented on the page following this map. In this situation, ample sales information is available for improved parcels within the land value neighborhood. Few sales of vacant land have occurred within that neighborhood. However, vacant and improved sales in a somewhat similar neighborhood produce the findings that follow.

The portion of the analysis used to derive the allocation ratio is provided in the table on the page following this map. Note that, usually, additional information would be presented in that table such as grantor, grantee, date of sale, terms of sale, etc.

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Land Tables Map: Example



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COMPARABLE NEIGHBORHOOD

Vacant / Improved	Address	Sale Price	Indicated LV	LV to Prop Val Ratio	LV to Bldg Val Ratio
Vacant	8730 Clarion	\$77,000			
Vacant	8700 Clarion	\$73,000			
	Indicated LV->	\$75,000			
Improved	8719 Clarion	\$376,000	20%	1 to 5	1 to 4
Vacant	8829 Bonaventure	\$58,000			
Vacant	8718 Bonaventure	\$63,000			
	Indicated LV->	\$60,000			
Improved	8803 Bonaventure	\$310,000	19%	1 to 5	1 to 4
Vacant	8601 Bonaventure	\$68,000			
Vacant	8665 Bonaventure	\$72,500			
	Indicated LV->	\$70,000			
Improved	8713 Bonaventure	\$340,000	21%	1 to 5	1 to 4
Conclusion: Land Value to Prop. or Bldg. Value Ratio				1 to 5	1 to 4

The preceding analysis concludes a Land-to-Property Value Ratio of 1 to 5 and a Land-to-Building Ratio of 1 to 4. Note that real life example would likely produce less consistent results.

SUBJECT NEIGHBORHOOD VALUES – Based on a Land to Property Value Ratio of 1 to 5 (20% of Property Price or Value)

Parcel Number	Address	Sale Price or Property Value	Indicated Land Value	Building Value
4716-19-201-056	8873 Vista	\$412,000	\$82,400	\$329,600
4716-19-201-060	8969 Vista	\$390,000	\$78,000	\$312,000
4716-19-201-068	9439 Wendover	\$350,000	\$70,000	\$280,000
4716-19-201-074	9452 Wendover	\$450,000	\$90,000	\$360,000
4716-19-201-075	9436 Wendover	\$335,000	\$67,000	\$268,000
4716-19-201-077	9404 Wendover	\$400,000	\$80,000	\$320,000
4716-19-201-081	8878 Vista	\$362,000	\$72,400	\$289,600

The preceding chart shows the indicated site values based on a land to property value ratio of 1 to 5 and or a land to building value ratio of 1 to 4. In analyzing a sale using this data, one would use the land to property ratio of 1 to 5 (20%) against the sale price to estimate a land value. In conducting a cost appraisal, one would determine the building value (RCNLD), and then use the land to building ratio 1 to 4 (25%) to estimate the land value.

EXTRACTION METHOD

The extraction method is another alternative method of land valuation which can be employed when insufficient vacant land sales information is available. This method is considered one of the lesser reliable methods due to the difficulty of measuring accrued depreciation. When vacant sales are available, the sales comparison method is preferred. In this method, an estimate of the depreciated cost of improvements is subtracted from the sale price of an improved property leaving the assessing officer with an estimate of the value of the land. For example, an improved property that sold for \$375,000 with an estimated depreciated cost of improvements of \$262,500 would suggest a land value of \$112,500 ($\$375,000 - \$262,500 = \$112,500$).

SUBDIVISION DEVELOPMENT METHOD

This discussion of the *subdivision development method* or *developer's method* is intended as only introduction to the considerations of this method without addressing the discounted cash flow analysis aspects of this method, although they are central.

This method is often used to value land in transition between uses, such as from agricultural use to a residential or commercial use. **Under this method the assessing officer hypothetically develops the parcel in its highest and best use.** Assume the highest and best use for the parcel is for development into a residential subdivision. The assessing officer first estimates the costs associated with developing the parcel into a subdivision and then subtracts those costs from the anticipated sale prices of the developed sites. **Because the subdivision development method uses many items that are difficult to accurately measure, use of method should be limited to cases where there are an insufficient number of sales of similar parcels available for development.** A primary consideration in using this method is that the land must be ripe for development and either zoning permits such a use or there is a reasonable probability of a change in zoning to allow such a use.

Subdivision Development Method Example

In this example, a 20-acre parcel is zoned for single-family residences. This is also the highest and best use of the property. Assuming that the parcel can be developed into four lots to the acre, including streets, the first consideration is supply and demand as well as purchasing power. The market indicates a value of \$40,000 per lot, or \$3,200,000 when the parcel has been completely developed (4 lots per acre X 20 acres = 80 lots; 80 lots X \$40,000 per lot = \$3,200,000 total indicated value). With this information, the appraiser conducts research regarding anticipated site development costs, including overhead, sales expenses, profit, and interest during development. For this example, that breakdown is as follows:

- Site development (streets, sewers, water service, site preparation, planning), 25 percent
- Overhead and sales expenses (commissions, title work, advertising, general office expenses, accounting and legal expenses), 25 percent
- Profit and interest cost during development and holding period, 25 percent

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Based on the preceding research the remaining 25 percent of lot sales can be attributed to the contributory value of the raw land. The value of the land under the subdivision development method is then \$800,000 (\$3,200,000 total indicated value X 0.25 = \$800,000 land value). It should be noted that each case must be analyzed separately when using the subdivision development method. The example above is just that, a simplistic, introductory example, and should not be construed to indicate a “normal” split in the percentages of development costs.

DEPTH FACTORS

A depth factor is used, usually in urban or suburban settings, to adjust land value for differences in the actual depth of a parcel compared to the standard or typical depth for an area. If a parcel is deeper than neighboring parcels, it will typically be worth more than the neighboring parcels, other things being equal. Put another way, a lot that is deeper than the standard depth lot will usually have more value, and a lot that has less depth than the standard lot will usually have less value. Two parcels with the same amount of frontage will likely have different values if one is deeper than the other. **Depth factors allow for a uniform amount per front foot to be used to value parcels of different depths. They accomplish this by adjusting for differences in depth by converting actual frontage into equivalent front feet.** Depth factor tables can be used as opposed to calculating individual depth factors for each parcel being valued. An example of a depth factor table is provided on the next page. When the frontage is multiplied by the depth factor, the product is known as the equivalent frontage. This equivalent frontage, multiplied by the established front foot value, gives the appraised value of the lot.

If a depth factor table is used, the resulting values should be checked against market information to ensure that the table is appropriate for the area being valued. Alternatively, a depth factor table can be developed from market information. In any event, when using a depth factor table, it should be kept in mind that a given depth factor table will not work in all valuation situations.

The depth factor derivation and application:

$$\text{Depth Factor} = \text{Square Root (Actual Depth / Standard Depth)}$$

$$\text{Equivalent Frontage} = \text{Actual Frontage} \times \text{Depth Factor}$$

$$\text{Site Value} = \text{Value per Front Foot} \times \text{Equivalent Frontage}$$

or combined:

$$\text{Site Value} = \text{Value per Front Foot} \times \text{Actual Frontage} \times \text{Square Root (Actual Depth / Standard Depth)}$$

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Figure 36

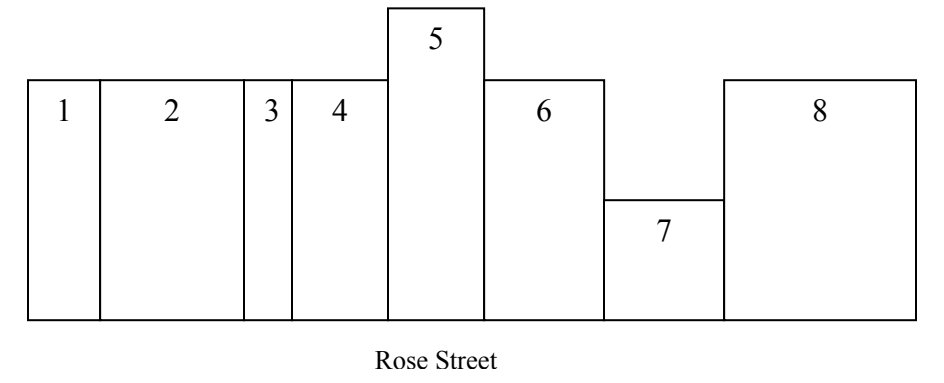
DEPTH FACTOR TABLE

Actual Depth of Lot	Standard Depth of Lot					
	100'	110'	120'	130'	135'	150'
	%	%	%	%	%	%
5'.....	22	21	21	20	19	18
10'.....	32	30	29	28	27	26
15'.....	39	37	35	34	33	32
20'.....	45	43	41	39	39	37
25'.....	50	48	46	44	44	41
30'.....	55	52	50	48	47	45
35'.....	59	56	54	52	51	48
40'.....	63	60	58	56	55	52
45'.....	67	64	61	59	58	55
50'.....	71	67	65	62	61	58
55'.....	74	71	68	65	64	61
60'.....	78	74	71	68	67	63
65'.....	81	77	74	71	69	66
70'.....	84	80	76	73	72	68
75'.....	87	83	79	76	75	71
80'.....	89	85	82	78	77	73
85'.....	92	88	84	81	79	75
90'.....	95	91	87	83	82	78
95'.....	98	93	89	86	84	80
100'.....	100	95	91	88	86	82
105'.....	103	98	94	90	88	84
110'.....	105	100	96	92	90	86
115'.....	107	102	98	94	92	88
120'.....	110	104	100	96	94	89
125'.....	112	107	102	98	96	91
130'.....	114	109	104	100	98	93
135'.....	116	111	106	102	100	95
140'.....	118	113	108	104	102	97
145'.....	120	115	110	106	104	98
150'.....	123	117	112	108	105	100
155'.....	125	119	114	109	107	102
160'.....	127	121	116	111	109	103
165'.....	129	123	117	113	111	105
170'.....	130	124	119	114	112	106
175'.....	132	126	121	116	114	108
180'.....	134	128	123	118	116	110
185'.....	136	130	124	119	117	111
190'.....	138	131	126	121	119	113
195'.....	140	133	128	123	120	114
200'.....	141	135	129	124	122	115

The depth factor table has been modified to eliminate decimals.

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Depth factors account for differences between the lots with a standard depth and lots with depths that vary from the standard lot depth. A lot is of standard depth when it has a depth that is common for most other lots in the area. See the drawing below. Lots 5 and 7 do not have standard depths. The remaining lots do have a standard depth.



Assume that several of the above lots have recently sold. From those sales, an amount per front foot has been developed, as shown below.

Lot Number	Sale Price	Front Feet (FF)	Sale Price Per FF
2	\$16,500	80	\$206
4	\$12,000	60	\$200
6	\$14,500	70	\$207
Indicated Value Per Front Foot:			\$205

From the above information, it has been determined that \$205 per front foot is appropriate for lots within this subdivision. All of the lots that have sold are standard depth lots. If the front foot rate of \$205 is applied to all of the above lots, will it be representative of the market value of each lot? Most people would probably argue that lot 5 should sell for more per front foot because of the additional depth, and lot 7 should sell for less. The use of a depth factor will effectively adjust the front foot rate used for the lots and compensate for the depth, more or less than the standard depth.

Using the depth factor table from above, assume that the standard depth of the lots is 120 feet. Lot 5 is 140 feet deep and lot 7 is 60 feet deep. Using the depth factor table provided above, first locate the column for standard depth of lot, 120 feet. Lot 5 is 140 feet deep, so go to the left hand column which has a heading of "Actual Depth of Lot". Find 140 feet and follow across to the right, to the column 120 feet. The depth factor is 108. Locate in the left column 60 feet for actual depth of lot 7. Again, follow to the right until you reach the column 120 feet. The depth factor is 71. The next step is to apply the depth factor to the actual front feet of each of the two non-standard depth lots and then value the lots using the calculated front foot rate, as follows (notice that the amount per front foot remains constant while the frontage is adjusted for depth):

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Lot 5 actual frontage = $60 \times 108\% = 64.8$; $64.8 \times \$205 = \$13,284$ or $\$13,300$ rounded

Lot 7 actual frontage = $60 \times 71\% = 42.6$; $42.6 \times \$205 = \$8,733$ or $\$8,700$ rounded

Below is the formula used to calculate the depth factors in the table provided above. Either a developed table such as the one provided above may be used or the appraiser may compute a depth factor using the formula below. Either way, the result should approximate market value.

Depth factor = $\sqrt{\text{actual lot depth} \div \text{standard lot depth}}$

Example: $150 \text{ feet actual lot depth} \div 120 \text{ feet standard lot depth} = 1.25$, $\sqrt{1.25} = 1.12$

LAND VALUE DETERMINATION QUIZ

- | | | | |
|----|------|-------|--|
| 1. | TRUE | FALSE | Land values are usually obvious for any given area. |
| 2. | TRUE | FALSE | Vacant land sales information may be used by an assessor without verification to set land values. |
| 3. | TRUE | FALSE | The highest and best use of vacant land sales needs to be considered by an assessor or an equalization department in using those sales to set land values. |
| 4. | TRUE | FALSE | It is not necessary to remove the area lying under a public road right-of-way when determining the sale price per square foot of a sale parcel. |
| 5. | TRUE | FALSE | Outlier sales usually warrant additional investigation before they are used to determine land values. |
| 6. | TRUE | FALSE | If sales from outside the normal time frame of the sales study period are used to determine land values, adjustment for market conditions should be made to bring the sales to the midpoint of the sales study period. |
| 7. | TRUE | FALSE | If sales from outside the area for which land values are being determined are used to set land values, adjustment for location should be made. |
| 8. | TRUE | FALSE | When using the front foot as the unit of comparison, it is not necessary to also use a depth factor. |
| 9. | TRUE | FALSE | Adjustments applied to vacant land sales for location, to bring the sales into the proper time frame, etc. should be derived from the market. |

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10. TRUE FALSE When determining an adjustment for time, a single paired-sales analysis is generally not considered sufficient to justify the adjustment of older sales information to the mid point of the current sales study period.
11. TRUE FALSE In the extraction method, the assessing officer first determines a typical ratio of land value to total value for the specific type of property being appraised and then infers land value for the subject properties by applying that ratio.
12. TRUE FALSE Land lying under a public road right-of-way is exempt from taxation.
13. TRUE FALSE In situations where there is a lack of sales information, along with sales of vacant land, an assessing officer could also consider asking prices to help establish land values.
14. TRUE FALSE Location is considered an environmental force when considering a parcel's characteristics.
15. Using the formula, $\text{Depth factor} = \sqrt{\text{actual lot depth} \div \text{standard lot depth}}$, compute each depth factor and equivalent frontage and enter those amounts in the chart below. The standard depth for this exercise is 120 feet.

Lot Width	Actual Depth	Depth Factor	Equivalent Frontage
80	150		
70	135		
50	125		
60	120		
80	115		

Answers to the land value determination quiz are provided in the addendum.

LAND VALUE MAPS

Land value maps are a graphical presentation of land values for an entire assessment unit (i.e., an entire City or Township). A graphical display of land values enables the assessor to explain and defend the results of his or her land value analyses to taxpayers. The exercise of constructing land value maps also helps keep the assessor informed of land value changes or patterns in the assessment jurisdiction. Significant information which might not otherwise be noticed often becomes apparent when land value information is presented graphically.

It should be observed that Michigan Compiled Law 211.10e requires that assessors maintain land value maps consistent with the standards provided in the State Tax Commission's *Assessor's Manual*. **Land value maps are defined in the *Assessor's Manual* as "maps on which are recorded the front or square foot value of platted property and the square foot or per acre value of acreage property."** Some have interpreted this guidance to mean that land value maps should contain (only) sales information for vacant land. Certainly, as described above, maps with this information are beneficial to the assessment process. Others have interpreted the guidance in the *Assessor's Manual* regarding land value maps to mean that (only) the values determined by the assessor which are used to set assessments should be included on land value maps. Again, this information on land value maps is also beneficial to the assessment process. **It would seem that a good set of land value maps would contain both, the value conclusions for land used by the assessor to determine assessments, and the vacant land sales information used by the assessor to reach those conclusions.** This may take the form of two sets of maps (one with sales information and the other with the assessor's value conclusions). Further, it is a good practice to have individual land value maps, or color coded at a minimum, for different classes of property such as agricultural, residential, commercial, etc.

To set up a land value map system, it is first necessary to assemble a set of maps for the entire assessing district. Types of maps that can be used include, but are not limited to, copies of tax maps; copies of recorded plats of subdivisions; City, Township, and County street maps; aerial photographs with map overlays; and zoning and land use maps. Maps should be of a proper scale for meaningful usage. Once a set of maps has been assembled, known vacant land sales information which has been verified should be added to the maps. The sales information should be expressed on the maps in an appropriate unit of comparison for the type of property involved. The land value conclusions of the assessor should also be added to the maps—although, again, it may be practical to have two separate sets of maps, one containing actual vacant land sales information and the other containing the land values assigned by the assessor. This information will then enable a property owner to see how his or her land has been valued as well as the supporting information behind that valuation. This graphical presentation can be extremely helpful in explaining and defending assessments.

TYPES OF LAND VALUE MAPS

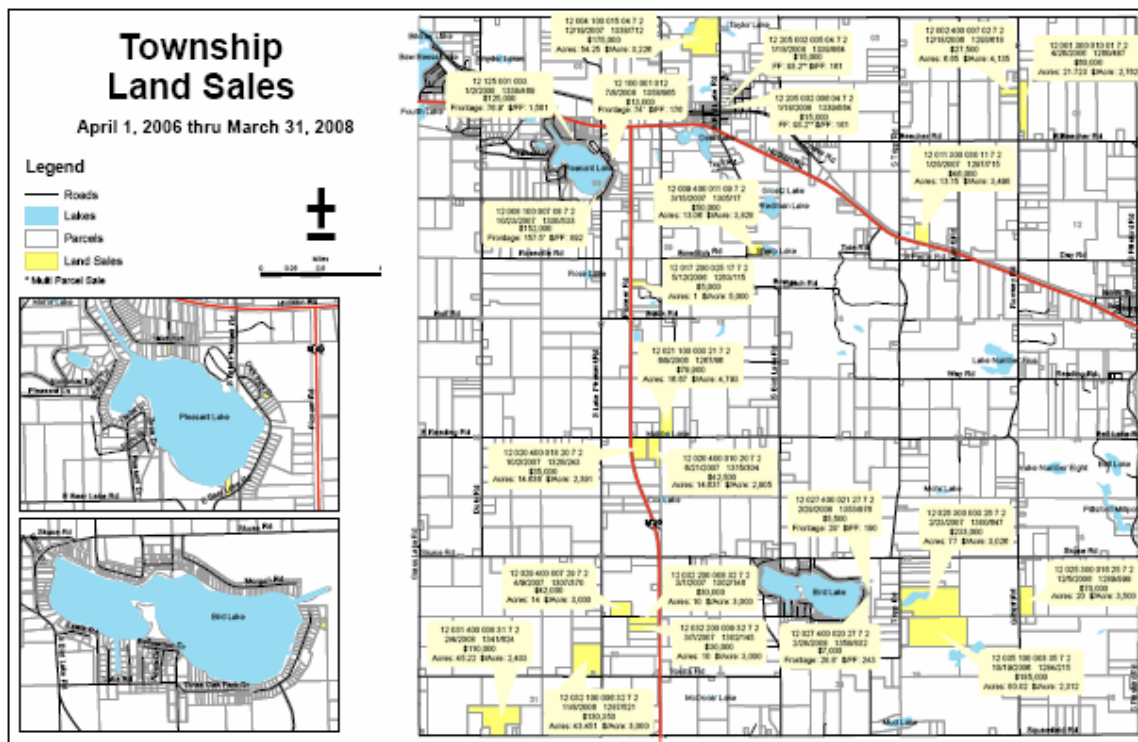
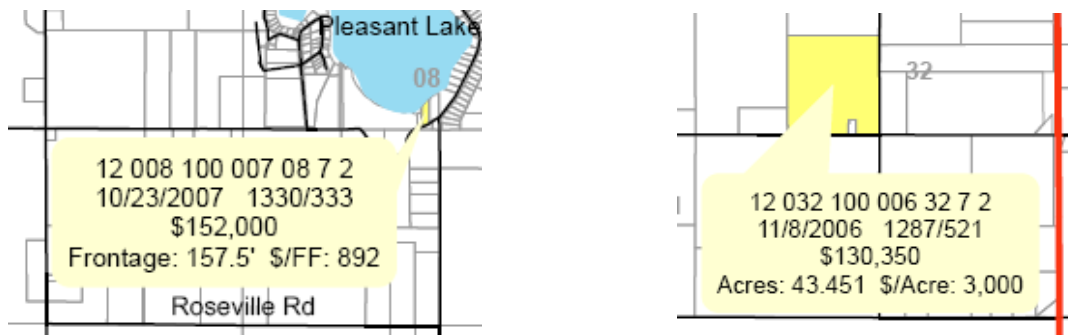
Land value maps can be prepared in different formats depending on the circumstances. A land value map for an urban area will necessarily be different from a land value map for a rural area. Examples of land value maps are provided as part of this program to illustrate what an acceptable land value map is under different circumstances. It should be noted that, while the land value maps presented as part of this program were produced through the use of computers, it is not

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necessary to have that level of technology to produce an acceptable land value map. Acceptable land value maps can also be produced by hand.

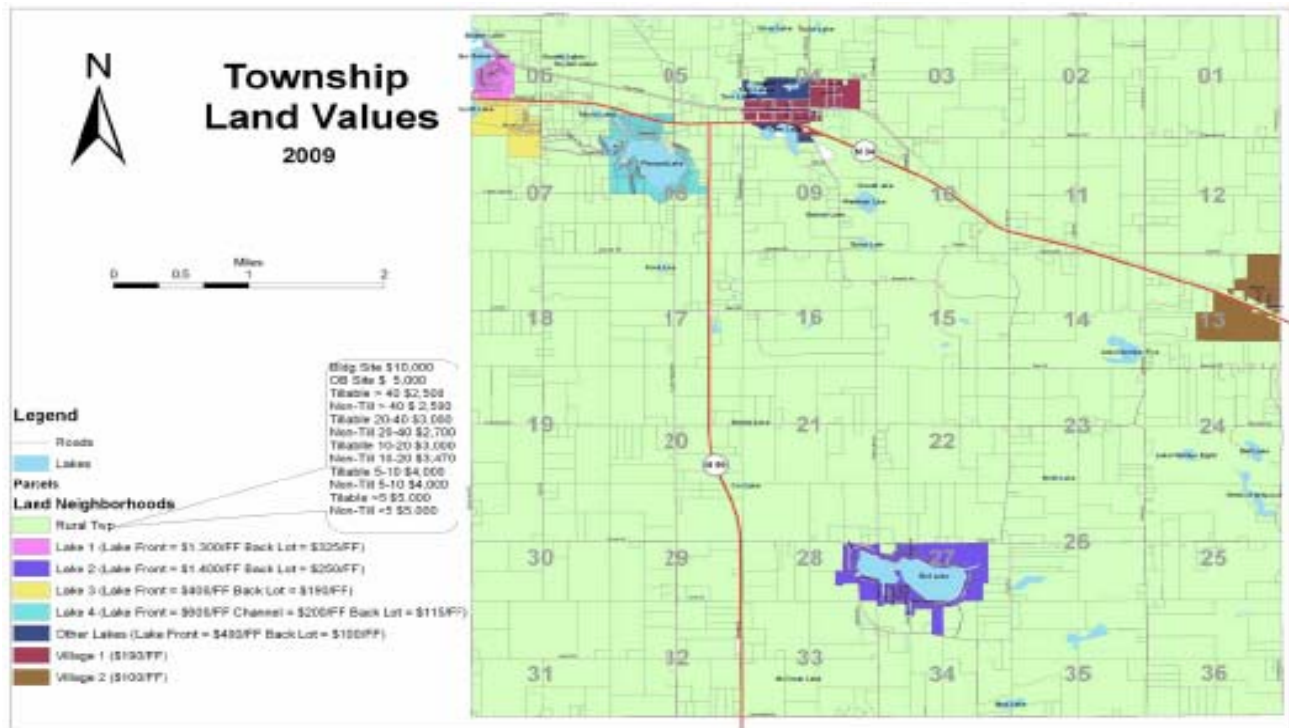
The map that follows shows vacant land sales information. The map is for a rural Township. Portions of the map have been reproduced below to make them large enough to be read as part of this program. In practice, the map would be printed in a scale that would allow the map to be legible. Also, the sold parcels have been highlighted on the map and details regarding the land sale have been noted. **The parcel number, the date of sale, the total sale price, and the sale price expressed in terms of a unit of comparison** have all been noted for each sale on the map. This information is useful in establishing land values to be applied by the assessor.

The Following map is one half of what is considered to be sound assessing practices with regard to land value maps. The other half of the equation is a map showing the land value conclusions used by the assessor to determine assessments. An example map for that purpose is provided on the next page.



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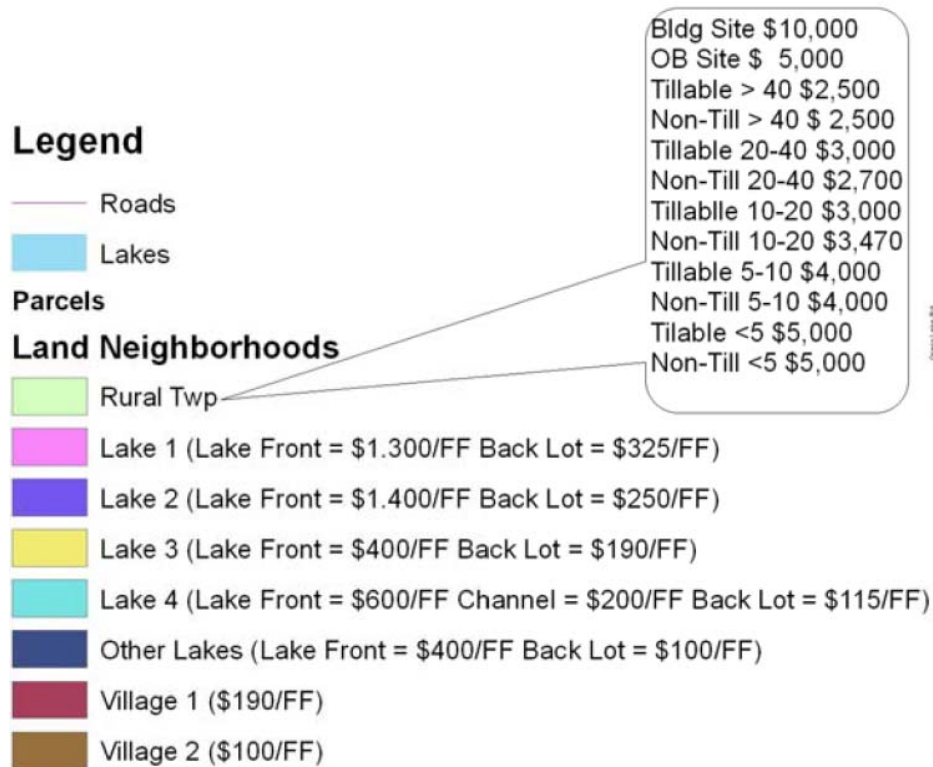
The map that follows was prepared to show the land value conclusions reached by the assessor that were used to determine assessed values. This map is for the same rural Township pictured in the map on the previous page. This map is the second half of what is considered good assessing practices with regard to land value maps.



Note the number of land value neighborhoods for this Township. The Rural Township neighborhood uses a rate for a building site and an outbuilding site as well as rates for different tillable and non-tillable acreages. Additional neighborhoods are provided for lake areas and for the Villages within the Township (i.e., more dense developments). Any commercial or industrial areas should also be included. In many cases, such a land value neighborhood breakdown will be sufficient. **For a rural Township such as this, it is not usually necessary to have an abundance of land value neighborhoods.** Often in cases like this, 'less is more' when it comes to land value analysis. Having too many land value neighborhoods can result in land value analysis complications due to a lack of sales information in each neighborhood, etc.

The legend from this map has been enlarged and reproduced on the following page so that the reader can see the land value neighborhoods and the rates used for each neighborhood.

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The density of urban and suburban development is the main reason for the differences in the format of land value maps. Example land value maps for an urban or suburban setting are provided later in this program.

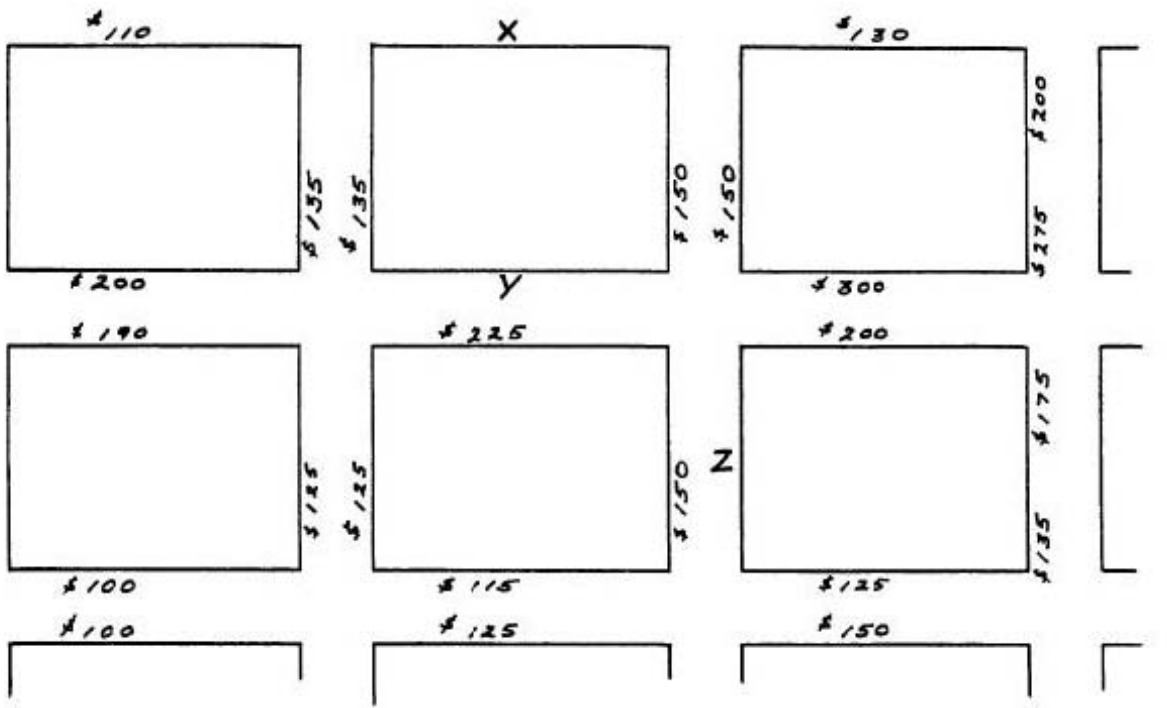
LAND VALUE MAP QUIZ

1. Using the following sales information, indicate on the map located on the next page a sale price per front foot for each sale. To determine the sale price per front foot, first divide the sale price by the front feet in each lot (frontage provided). The result will be the first step in developing a land value map for this area. The next step would be determining an appropriate amount per front foot to use in setting land values for this area and then that amount would be entered onto the land value map.

<u>Lot Number</u>	<u>Sale Price</u>	<u>Front Feet</u>	<u>Sale Price Per Front Foot</u>
2	\$18,500	206.16	
3	\$20,000	202.01	
8	\$23,000	188.54	
16	\$18,000	200.00	
21	\$24,000	200.59	
30	\$21,000	200.20	
35	\$23,000	257.56	
49	\$19,000	177.80	

Note: For this exercise, depth factors will not be applied.

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|-----|------|-------|--|
| 3. | TRUE | FALSE | Tax maps can be used as land value maps without modifying the tax maps. |
| 4. | TRUE | FALSE | It is not necessary to document land value determinations if an assessor can recall values of property in the local unit. |
| 5. | TRUE | FALSE | A graphical picture of land values (i.e., a land value map) assists the assessor in justifying assessments to taxpayers. |
| 6. | TRUE | FALSE | Creating land value maps helps an assessor observe land value trends in the local unit. |
| 7. | TRUE | FALSE | It is a good assessing practice to maintain maps that show both land sales information and the corresponding value conclusions reached by assessors. |
| 8. | TRUE | FALSE | Land value maps are nice to have but are not required by law. |
| 9. | TRUE | FALSE | There is no standard form for land value maps; land value maps can come in different formats depending on the circumstances. |
| 10. | TRUE | FALSE | An assessor may create different land value maps for different property classes (e.g., agricultural, residential, etc.). |
| 11. | TRUE | FALSE | For a suburban residential lot, appropriate units of comparison include the front foot, the square foot, and a site or lot value. |

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|-----|------|-------|--|
| 12. | TRUE | FALSE | For a commercial shopping center property, an appropriate unit of comparison is a site or lot value. |
| 13. | TRUE | FALSE | Tillable agricultural land should be valued using the front foot as the unit of comparison. |
| 14. | TRUE | FALSE | Industrial parcels are generally valued using the square foot as the unit of comparison. |
| 15. | TRUE | FALSE | Timber land is typically valued using the acre as the unit of comparison. |

Answers to question 1 are provided above. Answers to questions 2 through 15 are found in the addendum.

EXAMPLE LAND VALUE MAPS AND LAND VALUE DATA

Example land value maps and land value data are presented on the following pages to help demonstrate some of the educational topics covered to this point in the program. The example information relates to the valuation of residential land in a hypothetical city known as Anywhere, Michigan. The example materials show land sales information that has been verified, collected, and converted to equivalent front foot rates. The example materials also show land value maps produced using the land sales information. Lastly, the example materials discuss the application of the allocation method as support for land value conclusions reached by the City.

In the City of Anywhere, Michigan, residential lots are valued on an equivalent front foot basis. Under this system, a lot that is deeper than the standard lot (i.e., the standard lot in the subdivision, on the street, etc.) is assigned an increased value and a lot that has less depth than the standard lot is assigned a reduced value through the use of depth factors. **The standard depth** of a residential lot in the City of Anywhere **is 120 feet**. A depth factor table from the *Assessor's Training Manual*, chapter 7, page 42 is used in this example to adjust for differences in the depths of the different lots. The actual frontage of lots having different depths than the standard is multiplied by the appropriate depth factor to determine the equivalent frontage of the lots. Equivalent frontages are then multiplied by the front foot rate determined by the assessor to estimate the land value of the properties being appraised. The goal in the example situation is to arrive at an accurate front foot rate.

The table on the next page shows residential vacant land sales in the city of Anywhere from the two-year equalization study period. This represents all the verified residential vacant land sales activity in the City over this period. The table also shows the equivalent frontages for the sale parcels. Equivalent frontages have been divided into the sale prices to determine the sale prices per equivalent front foot. This provides indications of appropriate front foot rates for residential lots in the city.

An additional consideration which should be mentioned is that lots that are considerably greater in equivalent front feet than what is typical may need an adjustment in the rate that is applied to

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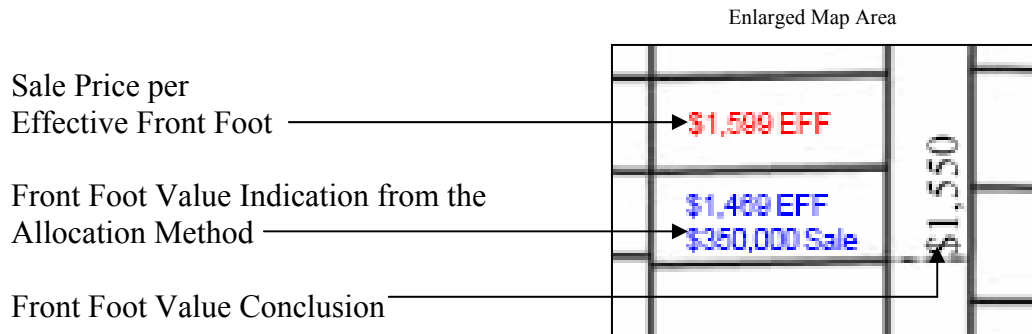
them. **The most important issues in making such adjustments are that the assessing officer be consistent, that they make sense, and that they are defensible.**

RESIDENTIAL VACANT LAND SALES FOR ANYWHERE, MICHIGAN								
Parcel Number	Property Class	Sale Date	Sale Amount	Front Feet	Depth	Depth Factor	Equivalent Front Feet	Sale Price per Equivalent Front Foot
15-15-127-015	RES-401	2/18/2007	\$95,000	55.00	140.00	1.08	59.40	\$1,599
15-15-128-016	RES-401	11/22/2006	\$75,900	44.50	140.00	1.08	48.06	\$1,579
15-15-128-024	RES-401	4/14/2007	\$75,000	43.00	140.00	1.08	46.44	\$1,615
15-15-130-002	RES-401	4/27/2006	\$80,000	65.00	86.00	0.84	54.60	\$1,465
15-15-130-019	RES-401	5/30/2006	\$69,000	44.00	140.00	1.08	47.52	\$1,452
15-15-132-012	RES-401	6/6/2007	\$120,000	92.10	124.00	1.02	93.94	\$1,277
15-15-176-006	RES-401	7/12/2007	\$95,000	100.00	124.00	1.02	102.00	\$931
15-15-177-012	RES-401	12/20/2006	\$82,500	50.00	140.00	1.08	54.00	\$1,528
15-15-178-027	RES-401	5/13/2006	\$75,500	40.00	170.00	1.19	47.60	\$1,586
15-15-181-005	RES-401	3/10/2007	\$82,000	50.00	132.00	1.05	52.50	\$1,562
15-15-181-016	RES-401	9/12/2006	\$82,500	50.00	132.00	1.05	52.50	\$1,571
15-15-182-005	RES-401	5/5/2006	\$84,900	50.00	148.00	1.11	55.50	\$1,530
15-15-182-033	RES-401	9/28/2007	\$79,000	50.00	150.00	1.12	56.00	\$1,411
15-15-202-014	RES-401	10/24/2006	\$65,000	50.00	130.00	1.04	52.00	\$1,250
15-15-203-011	RES-401	7/17/2006	\$79,000	45.00	279.00	1.54	69.30	\$1,140
15-15-204-015	RES-401	3/13/2008	\$95,000	72.85	120.00	1.00	72.85	\$1,304
15-15-205-011	RES-401	11/22/2007	\$125,000	100.00	139.00	1.08	108.00	\$1,157
15-15-206-010	RES-401	10/30/2007	\$105,000	90.50	120.00	1.00	90.50	\$1,160
15-15-208-003	RES-401	12/9/2007	\$69,000	45.00	171.00	1.19	53.55	\$1,289
15-15-208-018	RES-401	9/21/2007	\$95,000	60.96	171.00	1.19	72.54	\$1,310
15-15-229-002	RES-401	2/2/2008	\$82,500	59.42	143.00	1.09	64.77	\$1,274
15-15-230-004	RES-401	8/17/2007	\$69,500	48.00	149.00	1.12	53.76	\$1,293
15-15-233-013	RES-401	1/15/2008	\$59,000	40.00	118.00	0.99	39.60	\$1,490
15-15-254-016	RES-401	1/11/2008	\$64,900	51.00	120.00	1.00	51.00	\$1,273
15-15-256-003	RES-401	7/15/2007	\$84,500	60.00	157.00	1.15	69.00	\$1,225
15-15-258-003	RES-401	11/13/2006	\$72,500	50.00	120.00	1.00	50.00	\$1,450
15-15-259-009	RES-401	8/17/2007	\$69,000	75.00	100.00	0.91	68.25	\$1,011
15-15-260-002	RES-401	1/11/2007	\$82,500	60.00	159.00	1.16	69.60	\$1,185
15-15-261-015	RES-401	4/3/2007	\$72,900	53.00	120.00	1.00	53.00	\$1,375
15-15-279-003	RES-401	11/29/2006	\$50,000	50.00	133.00	1.06	53.00	\$943
15-15-280-002	RES-401	2/22/2008	\$185,000	180.00	200.00	1.29	232.20	\$797

Note: All of the above sales were verified. Some depth factors are the result of interpolation. Using the preceding vacant land sales information, land value maps showing both prices and values have been created. All the vacant land sales have been plotted on four maps as shown below in the enlarged map area inset. For each sale, the verified sale price per effective front foot is shown. Also shown is the rate per effective front foot derived using the allocation method to support the vacant land sales information. Lastly, value conclusions reached by the assessor

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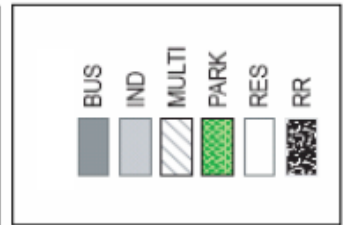
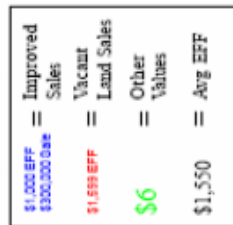
to value the lots are shown in the road right-of-way areas. An overall City zoning map for the City of Anywhere is shown below. On the next four pages, four additional maps of the City are provided. The four additional maps are of smaller areas and show the various land sales (in value per equivalent front foot) and the concluded land values for each street in the City. With this information and the value conclusions reached by the assessor and used to determine assessed values, the maps on the next four pages are considered to be good examples of land value maps.



Section 1



Section 2



Section 3



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In reviewing the vacant land sales information, it was determined that the amount of vacant sales data was not ideal and that this lack of sales data would be a weakness in establishing residential land values in some neighborhoods in the City. It was decided to use the allocation method to support the value conclusions reached by the assessor.

ALLOCATION METHOD

The table below shows an analysis of sales of improved residential properties paired with sales of residential vacant land to determine the proper allocation. **The analysis indicates that land value is approximately 25 percent of the total value of improved parcels, based on sales that have occurred in the City.** That ratio was applied to a number of (verified) improved sales in town. The sale prices of the improved sales were also posted to the land value maps along with a figure for the equivalent front foot value associated with each improved sale. The figure for the equivalent front foot value was calculated by taking 25 percent of those sale prices and dividing the result by the equivalent front footage of each sold parcel. In this case, the resulting allocated land values were converted to equivalent front foot rates to be consistent with the unit of comparison used in other neighborhoods throughout the City. (See the maps on the preceding four pages.)

CITY OF ANYWHERE, MICHIGAN LAND VALUATION BY ALLOCATION METHOD					
IMPROVED PARCELS			UNIMPROVED (VACANT) PARCELS		Ratio of Unimproved (Vacant) Sale Price to Improved Sale Price
Parcel Number	Sale Date	Verified Sale Price	Parcel Number	Verified Sale Price	
15-15-127-018	7/31/2007	\$350,000	15-15-182-033	\$79,000	23%
15-15-128-040	5/17/2006	\$445,000	15-15-132-012	\$120,000	27%
15-15-128-048	4/25/2006	\$369,900	15-15-176-006	\$95,000	26%
15-15-135-003	3/30/2008	\$300,000	15-15-128-024	\$75,000	25%
15-15-177-003	5/19/2007	\$324,900	15-15-130-002	\$80,000	25%
15-15-181-007	8/31/2007	\$325,000	15-15-181-016	\$82,500	25%
15-15-204-010	7/1/2006	\$265,000	15-15-208-003	\$69,000	26%
15-15-229-016	8/11/2006	\$375,000	15-15-208-018	\$95,000	25%
15-15-255-012	9/16/2006	\$290,000	15-15-261-015	\$72,900	25%
15-15-256-001	1/30/2008	\$361,900	15-15-256-003	\$84,500	23%
TOTALS:		\$3,406,700	---	\$852,900	25%

ECONOMIC CONDITION FACTOR (ECF) COMPUTATION AND APPLICATION⁴

In Michigan, assessments are to be set at 50 percent of true cash value. There are three traditional approaches used by assessing officers to estimate true cash value: the cost approach, the income approach, and the sales comparison approach. If applied correctly, these three approaches to value are all related to the market and can generally be expected to produce similar valuation estimates.

The cost approach to value used by assessors in Michigan is related to the market through the use of County multipliers and ECFs. County multipliers adjust the statewide costs found in the State Tax Commission *Assessor's Manual* to the various Counties and ECFs adjust the costs further to the local market. **The purpose of an ECF is to adjust the indication of value obtained via the cost approach to local market conditions. For structures, an ECF converts the cost new less depreciation which results from the use of the *Assessor's Manual* to a true cash value estimate in a local market area.**

It can be said that an ECF adjusts my usage of the cost manuals to a local market. The point is the two equally competent assessors when examining the same structure often will observe a different *class or quality of construction, depreciation*, or other items affecting the *cost by manual*. These differences will result in the calculation of ECFs that differ for the same properties. The point is that it is difficult for one person to apply an ECF calculated by another. This can only be accomplished through careful collaboration.

It should be noted that an ECF must be determined and used in **all** cost appraisal situations where the *Assessor's Manual* is used. Situations have been observed where an assessor does not use an ECF with the stated reason that **“I didn’t need to use an ECF because I used the new *Assessor's Manual*.”** This is not valid reasoning. Even if the cost manual being utilized is brand new, it is a statewide manual and the indication of value derived using that statewide manual must be adjusted to local market conditions through the use of an ECF. Likewise, a reason for not using an ECF such as **“I didn’t need to use an ECF because I was valuing new construction”** is also not valid (Consider that a house is often more valuable on a lake than other locations). Again, an ECF must be used to adjust the statewide costs of the *Assessor's Manual* to local markets. An ECF must be used regardless of the age of the improvements being valued.

THE COMPUTATION PROCEDURE

Assessors rely on mass appraisal models to calculate current building values. An ECF is derived by detailed analysis of property sale prices where the portion of each sale price attributable to the building(s) on the parcel is compared to the depreciated cost figure the mass appraisal model has generated for the same building(s). An ECF represents the relationship between the appraised value of a building generated by using the *Assessor's Manual* and the sale value of that building. An ECF, when applied to depreciated costs, is how an assessing officer estimates the value buildings are actually bringing in the market studied. And when the building values are added to the value of land and land improvements, indications of true cash value are obtained for assessment purposes.

⁴ This section of the renewal program relies heavily on the ideas and concepts contained in Chapter 14 of Volume III of the State Tax Commission *Assessor's Manual*.

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The following table contains the reproduction cost new of four homes which are identical except that they are located in four different Michigan Counties. The base reproduction cost new for these homes using the *Assessor's Manual* is \$100,000. The base cost is multiplied by the appropriate County multiplier to yield the final reproduction cost new for each house in each County. **Although the base cost new for identical structures would be the same throughout Michigan, reproduction cost new for the structures varies significantly from County to County due to differences in labor costs, transportation costs, material costs, and so on.**

COUNTY	BASE REPRODUCTION COST NEW	COUNTY MULTIPLIER ⁵	FINAL REPRODUCTION COST NEW
Alcona	\$100,000	1.00	\$100,000
Marquette	\$100,000	1.08	\$108,000
Genesee	\$100,000	1.20	\$120,000
Wayne	\$100,000	1.30	\$130,000

After obtaining an estimate of cost new by applying the correct County multiplier as shown above, the assessing officer subtracts depreciation, resulting in an estimate of cost new less depreciation.

To generate an ECF indication for an ECF analysis, the depreciated cost of a building which has sold is compared to the sale value of that building. Specifically, **the ECF indicator for each sale is calculated by dividing the sale value of the building by the cost new (with county multiplier applied) less depreciation of the building.** The result is an ECF indicator. One indicator is not sufficient for the calculation of a valid ECF. Multiple ECF indications are needed to produce a reliable ECF for use in the mass appraisal process. Use of a sufficient number of sales is necessary to ensure the accuracy of an ECF determination.

Given sufficient sales information, the determination of an ECF is generally not a complex task. An example ECF analysis for a neighborhood of residential properties in the hypothetical City of Anywhere is provided on the next page.

⁵ The County multipliers used here are 2007 County multipliers for 2003 base rates for a frame (siding) residence.

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EXAMPLE ECONOMIC CONDITION FACTOR ANALYSIS CITY OF ANYWHERE, MICHIGAN For 2009 Assessment Year						
<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
Parcel Number	Sale Date	(Verified) Sale Price	Estimated Value of Land and Land Improvements ⁶	Sale Value of Buildings	Cost New Less Depreciation of Buildings (After Applying County Multipliers)	Indicated Economic Condition Factor
15-15-208-010	4/3/2006	\$375,500	\$90,000	\$285,500	\$272,238	1.05
15-15-128-048	4/25/2006	\$369,900	\$95,000	\$274,900	\$238,758	1.15
15-15-128-040	5/17/2006	\$445,000	\$120,000	\$325,000	\$296,951	1.09
15-15-231-005	5/20/2006	\$378,000	\$90,000	\$288,000	\$281,714	1.02
15-15-204-010	7/1/2006	\$265,000	\$65,000	\$200,000	\$177,170	1.13
15-15-229-016	8/11/2006	\$375,000	\$90,000	\$285,000	\$270,779	1.05
15-15-208-021	8/23/2006	\$400,000	\$100,000	\$300,000	\$278,034	1.08
15-15-255-012	9/16/2006	\$290,000	\$75,000	\$215,000	\$207,805	1.03
15-15-177-003	5/19/2007	\$324,900	\$80,000	\$244,900	\$223,376	1.10
15-15-183-008	8/18/2007	\$380,000	\$95,000	\$285,000	\$295,690	0.96
15-15-181-007	8/31/2007	\$325,000	\$80,000	\$245,000	\$231,436	1.06
15-15-258-002	11/22/2007	\$310,000	\$75,000	\$235,000	\$214,338	1.10
15-15-256-001	1/30/2008	\$361,900	\$90,000	\$271,900	\$255,527	1.06
15-15-276-002	3/3/2008	\$360,500	\$85,000	\$275,500	\$239,401	1.15
15-15-135-003	3/30/2008	\$300,000	\$75,000	\$225,000	\$213,719	1.05
15-15-127-016	3/31/2008	\$350,000	\$135,900	\$214,100	\$197,525	1.08
TOTALS:				\$4,169,800	\$3,894,461	1.07

The ECF as computed above is 1.07 (or 107 percent) and often is properly rounded to two decimal places. This figure was calculated by taking the total sale value of the buildings and dividing that amount by the total depreciated cost of the buildings ($\$4,169,800 \div \$3,894,461 = 1.07$). The sale value of buildings in column E is calculated by deducting the value of land and land improvements in column D from the sale price in column C. Individual ECF indications in column G are calculated by dividing the sale value of buildings in column E by the depreciated cost of the buildings in column F.

Note that, although the individual ECF indications are shown in the ECF analysis, the separate ECF indications are not averaged to produce the overall ECF used in the mass appraisal process. **Including the separate ECF indications is considered beneficial in that outlying ECF indications are easily spotted and the associated ECF sale/appraisal can then be given additional scrutiny (and removed from the analysis if good cause is discovered).** Additionally, it is desirable for the individual ECF indications to be relatively consistent

⁶ For an ECF analysis, the value of land and land improvements is to be estimated as of the date of sale.

(although the degree of consistency can be expected to vary depending on the ECF area, the type of property involved, etc.). Showing the individual ECF indications is beneficial because it allows the assessing officer to consider the relative consistency of the analysis which has implications for the validity of the analysis. It is also a good practice to plot the individual ECF indications on a map of the ECF area. Similar to the exercise of developing land value maps, **plotting individual ECF indications on a map can provide significant insights to an assessing officer.**

The example ECF analysis would have been produced using the residential cost schedules from Volume I of the *Assessor's Manual*. An assessing officer would follow the same procedures to determine commercial and industrial ECFs (and agricultural ECFs where agricultural sales data are available).

ECF CALCULATION METHODS

There are two primary ECF calculation methods currently being practiced.

ECF Calculation Method One

The first ECF calculation method currently being practiced is based on language from Volume III of the *Assessor's Manual*, page 14-3 which states:

sales from the second 12 months of a 24-month analysis which were used to compute the current year's ECF may be used for the following year's ECF. However, the county multipliers will need to be changed to the current multipliers in the following year. The **land values** and depreciation **will remain unchanged.**

Under this method, the parcels from the most recent year of the prior year's ECF analysis are reused the following year as the oldest year of the current year's ECF analysis. Also under this method, the land values used in the analysis last year for what becomes the oldest year of the current year's ECF analysis are not changed. However, additional explanation is required.

The meaning of the following statement (found on the same page as the preceding statement) is often missed. It states:

Land values should be estimated **as of the time of the sale** and should be deducted from the sale price for the ECF analysis.

The land value referred to here is the 'current' land value *as of the date of sale*, and not a land value derived from the 24 month (or 12 month) land value analysis or grid. Because the land value is as of (adjusted to) the date of sale, it does not change with time and should not be changed with the updating of the land value analysis. In accordance with the *Assessor's Manual*, the cost new less depreciation of the buildings (for both years of the analysis) is updated using the current County multipliers. Note that few assessment administrators practice this first method.

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The example ECF analysis for the City of Anywhere used earlier is reproduced below (Chart 1) and used to demonstrate this ECF calculation method. First the parcels from the oldest year of the ECF analysis from last year are removed from the analysis. This is shown below by the parcels being lined out in the grid. The grid without these parcels is then used with the reused parcels' appraisals being updated with current County multipliers and with parcels added from the next year to determine the ECF (Chart 2). **Note that the land values *as of the sale date* do not change from year to year (with the updating of the chart).**

Chart 1, ECF Grid with Sales from Oldest Year Lined Out:

EXAMPLE ECONOMIC CONDITION FACTOR ANALYSIS CITY OF ANYWHERE, MICHIGAN For 2010 Assessment Year						
<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
Parcel Number	Sale Date	(Verified) Sale Price	Estimated Value of Land (as of sale date & not from grid) and Land Improvements	Sale Value of Buildings	Cost New Less Depreciation of Buildings (After Applying County Multipliers)	Indicated Economic Condition Factor
15-15-208-010	4/3/2006	\$375,500	\$90,000	\$285,500	\$272,238	1.05
15-15-128-048	4/25/2006	\$369,900	\$95,000	\$274,900	\$238,758	1.15
15-15-128-040	5/17/2006	\$445,000	\$120,000	\$325,000	\$296,951	1.09
15-15-231-005	5/20/2006	\$378,000	\$90,000	\$288,000	\$281,714	1.02
15-15-204-010	7/1/2006	\$265,000	\$65,000	\$200,000	\$177,170	1.13
15-15-229-016	8/11/2006	\$375,000	\$90,000	\$285,000	\$270,779	1.05
15-15-208-021	8/23/2006	\$400,000	\$100,000	\$300,000	\$278,034	1.08
15-15-255-012	9/16/2006	\$290,000	\$75,000	\$215,000	\$207,805	1.03
15-15-177-003	5/19/2007	\$324,900	\$80,000	\$244,900	\$223,376	1.10
15-15-183-008	8/18/2007	\$380,000	\$95,000	\$285,000	\$295,690	0.96
15-15-181-007	8/31/2007	\$325,000	\$80,000	\$245,000	\$231,436	1.06
15-15-258-002	11/22/2007	\$310,000	\$75,000	\$235,000	\$214,338	1.10
15-15-256-001	1/30/2008	\$361,900	\$90,000	\$271,900	\$255,527	1.06
15-15-276-002	3/3/2008	\$360,500	\$85,000	\$275,500	\$239,401	1.15
15-15-135-003	3/30/2008	\$300,000	\$75,000	\$225,000	\$213,719	1.05
15-15-127-016	3/31/2008	\$350,000	\$135,900	\$214,100	\$197,525	1.08
TOTALS:						

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Chart 2, ECF Grid with Reused Appraisals Updated (County Multipliers Only) and New Sales Added:

EXAMPLE ECONOMIC CONDITION FACTOR ANALYSIS CITY OF ANYWHERE, MICHIGAN For 2010 Assessment Year						
<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
Parcel Number	Sale Date	(Verified) Sale Price	Estimated Value of Land (as of sale date & not from grid) and Land Improvements	Sale Value of Buildings	Cost New Less Depreciation of Buildings (After Applying County Multipliers)	Indicated Economic Condition Factor
15-15-177-003	5/19/2007	\$324,900	\$80,000	\$244,900	\$227,844	1.07
15-15-183-008	8/18/2007	\$380,000	\$95,000	\$285,000	\$301,604	0.94
15-15-181-007	8/31/2007	\$325,000	\$80,000	\$245,000	\$236,065	1.04
15-15-258-002	11/22/2007	\$310,000	\$75,000	\$235,000	\$218,625	1.07
15-15-256-001	1/30/2008	\$361,900	\$90,000	\$271,900	\$260,638	1.04
15-15-276-002	3/3/2008	\$360,500	\$85,000	\$275,500	\$244,189	1.13
15-15-135-003	3/30/2008	\$300,000	\$75,000	\$225,000	\$217,993	1.03
15-15-127-016	3/31/2008	\$350,000	\$135,900	\$214,100	\$201,476	1.06
15-15-141-080	4/5/2008	\$305,000	\$70,000	\$235,000	\$209,821	1.12
15-15-711-016	6/16/2008	\$341,900	\$90,000	\$251,900	\$226,937	1.11
15-15-987-002	8/10/2008	\$355,000	\$130,000	\$225,000	\$252,809	0.89
15-15-711-017	11/29/2008	\$335,500	\$80,000	\$255,500	\$252,970	1.01
15-15-656-008	1/31/2009	\$360,000	\$142,000	\$218,000	\$200,128	1.09
15-15-654-009	2/12/2009	\$375,000	\$140,000	\$235,000	\$199,153	1.18
15-15-554-121	3/18/2009	\$318,900	\$70,000	\$248,900	\$247,887	1.00
TOTALS:				\$3,665,700	\$3,498,139	1.05

ECF Calculation Method Two

The second ECF calculation method differs from the first method, in that, the land values used for the parcels for the first year of the updated ECF analysis are changed and drawn from the updated land value analysis. In other words, for the parcels that are reused in the analysis, the land values used for those parcels will be the updated land values drawn from the current land value analysis, and not the land values that were used for those parcels in the prior year's ECF analysis (as drawn from last year's land value analysis). Although this second ECF calculation method may not be found in the *Assessor's Manual*, this method is commonly used by the assessing community, and so, training on its correct use is warranted.

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Again, the example ECF analysis for the City of Anywhere used earlier is reproduced below (Chart 3) and used to demonstrate this second ECF calculation method. First the parcels from the oldest year of the prior ECF analysis are removed from the analysis. This is shown by the parcels being lined out in Chart 3. The grid without these parcels is then used, with parcels added from the next year to determine the ECF.

Chart 3, ECF Grid with Sales from Oldest Year Lined Out:

EXAMPLE ECONOMIC CONDITION FACTOR ANALYSIS CITY OF ANYWHERE, MICHIGAN For 2010 Assessment Year						
<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
Parcel Number	Sale Date	(Verified) Sale Price	Estimated Value of Land (from last year's LV analysis) and Land Improvements	Sale Value of Buildings	Cost New Less Depreciation of Buildings (After Applying County Multipliers)	Indicated Economic Condition Factor
15-15-208-010	4/3/2006	\$375,500	\$90,000	\$285,500	\$272,238	1.05
15-15-128-048	4/25/2006	\$369,900	\$95,000	\$274,900	\$238,758	1.15
15-15-128-040	5/17/2006	\$445,000	\$120,000	\$325,000	\$296,951	1.09
15-15-231-005	5/20/2006	\$378,000	\$90,000	\$288,000	\$281,714	1.02
15-15-204-010	7/1/2006	\$265,000	\$65,000	\$200,000	\$177,170	1.13
15-15-229-016	8/11/2006	\$375,000	\$90,000	\$285,000	\$270,779	1.05
15-15-208-021	8/23/2006	\$400,000	\$100,000	\$300,000	\$278,034	1.08
15-15-255-012	9/16/2006	\$290,000	\$75,000	\$215,000	\$207,805	1.03
15-15-177-003	5/19/2007	\$324,900	\$80,000	\$244,900	\$223,376	1.10
15-15-183-008	8/18/2007	\$380,000	\$95,000	\$285,000	\$295,690	0.96
15-15-181-007	8/31/2007	\$325,000	\$80,000	\$245,000	\$231,436	1.06
15-15-258-002	11/22/2007	\$310,000	\$75,000	\$235,000	\$214,338	1.10
15-15-256-001	1/30/2008	\$361,900	\$90,000	\$271,900	\$255,527	1.06
15-15-276-002	3/3/2008	\$360,500	\$85,000	\$275,500	\$239,401	1.15
15-15-135-003	3/30/2008	\$300,000	\$75,000	\$225,000	\$213,719	1.05
15-15-127-016	3/31/2008	\$350,000	\$135,900	\$214,100	\$197,525	1.08
TOTALS:						

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Chart 4, ECF Grid with Reused Appraisals: Updated Land Values and County Multipliers and New Sales Added. The appraisals for the reused parcels are updated using this year's study land values and current County multipliers. Again, **note that the land values as drawn from the land value analysis change from year to year (with the updating of the chart).**

EXAMPLE ECONOMIC CONDITION FACTOR ANALYSIS CITY OF ANYWHERE, MICHIGAN For 2010 Assessment Year						
<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>
Parcel Number	Sale Date	(Verified) Sale Price	Estimated Value of Land (from this year's LV analysis) and Land Improvements	Sale Value of Buildings	Cost New Less Depreciation of Buildings (After Applying County Multipliers)	Indicated Economic Condition Factor
15-15-177-003	5/19/2007	\$324,900	\$81,600	\$243,300	\$227,844	1.07
15-15-183-008	8/18/2007	\$380,000	\$96,000	\$284,000	\$301,604	0.94
15-15-181-007	8/31/2007	\$325,000	\$81,600	\$243,400	\$236,065	1.03
15-15-258-002	11/22/2007	\$310,000	\$76,400	\$233,600	\$218,625	1.07
15-15-256-001	1/30/2008	\$361,900	\$91,800	\$270,100	\$260,638	1.04
15-15-276-002	3/3/2008	\$360,500	\$86,700	\$273,800	\$244,189	1.12
15-15-135-003	3/30/2008	\$300,000	\$76,500	\$223,500	\$217,993	1.03
15-15-127-016	3/31/2008	\$350,000	\$137,900	\$212,100	\$201,476	1.05
15-15-141-080	4/5/2008	\$305,000	\$70,000	\$235,000	\$209,821	1.12
15-15-711-016	6/16/2008	\$341,900	\$90,000	\$251,900	\$226,937	1.11
15-15-987-002	8/10/2008	\$355,000	\$130,000	\$225,000	\$252,809	0.89
15-15-711-017	11/29/2008	\$335,500	\$80,000	\$255,500	\$252,970	1.01
15-15-656-008	1/31/2009	\$360,000	\$142,000	\$218,000	\$200,128	1.09
15-15-654-009	2/12/2009	\$375,000	\$140,000	\$235,000	\$199,153	1.18
15-15-554-121	3/18/2009	\$318,900	\$70,000	\$248,900	\$247,887	1.00
TOTALS:				\$3,653,100	\$3,498,139	1.04

MISCELLANEOUS ECF CONSIDERATIONS

Sales for an ECF analysis should generally be drawn from the same time period used for a sales study performed to set the starting base for equalization purposes. For example, a two-year residential class sales study performed to set the starting base for an assessing unit for 2009 and an ECF analysis performed by an assessor to set 2009 residential class assessments in that unit would both include sales information from April 1, 2006 through March 31, 2008. For 2010 assessments the time period is October 1, 2007 through September 30, 2009.

ECF areas should be established so that groups of properties (i.e., neighborhoods) sharing similar characteristics are included together. Natural or man-made boundaries will usually serve as ECF area boundaries. ECF areas should also be established so that they are not too large. Doing so could lead to an ECF which properly values the overall ECF area, but incorrectly values various neighborhoods, and individual parcels, that are improperly included in the area.

ECFs can also be calculated for a group of properties based primarily on the structures' other physical characteristics (instead of the properties' geographic location). Examples include houses which are of a certain size, tri-level homes, apartments, warehouses, etc. It is crucial to the validity of an ECF determination that the determination be based on a sufficient number of arms-length sales and that the sales be representative of the properties to be appraised using the ECF.

It is possible (and likely) that the same large City or Township will have many ECFs, as will a County. Varying ECFs can often be computed directly. Occasionally due to a lack of a number of current sales, it will be necessary to estimate an ECF. In estimating an ECF one should analyze historical sales (application of time adjustment) and sales of comparable properties from outside the area (may require location adjustment).

Also, one may choose to rework the ECF used by the county equalization department. To do this one must physically review the parcels contained in the county study to verify (or deny) all of the following: structure dimensions, class and/or quality of construction, depreciation, and cost adjustment items. **An insufficient number of sales from the time period in the area, is not a reason to ignore the sale or few sales that are in the area and from the time period.**

An assessing officer should verify the sale price and terms of sale for each parcel used in an ECF analysis. Inspection is best as close as possible to the sale date. The assessing officer should make sure to remove the value of any personal property, etc. from the sale price. Any unusual circumstances noted by the assessing officer should be considered as possible cause for the sale to be removed from the ECF analysis. **Physical changes to the property (e.g., remodeling, basement finish, addition, etc.) since the date of sale must be noted by the assessing officer so that the property can be valued as it existed prior to those changes (if possible), or so that the property can be removed from the ECF analysis. Effective age of buildings is to be determined as of the sale date, not the assessment date.**

As previously discussed, the value of land is estimated as of the date of the sale and the depreciated value of land improvements must be removed from the sale price when determining an ECF. What remains is the estimated 'market price' of the buildings, which is compared to the depreciated cost by manual of the buildings (i.e., the appraised value of the buildings) in the ECF analysis. Water supply and waste removal connections including well and septic systems are considered part of a building's plumbing system when those amenities are valued using the residential cost schedules in the *Assessor's Manual*; they are not to be deducted as land improvements. However, when an assessing officer has used local costs or flat values for such items, the value of the items should be subtracted from the sale price in the ECF analysis. An ECF should not be used to value any item that has been flat valued.

It is important that the land values deducted from the sale prices in the ECF analysis are realistic. It is also important when using ‘method 2’ that the land values used to set the ECF are those used for the appraisals.

Sometimes, there will be insufficient vacant land sales in an ECF area. In such cases, it will be necessary to obtain and use **land sales from outside the ECF area, or outside the time period.** When land sales from outside the ECF area or the standard time frame are used, the assessing officer is to use recognized appraisal methods and make appropriate and justifiable adjustments to estimate land value. Sales which have occurred in the proper time frame need not be adjusted for market conditions (i.e., time). Again, an insufficient number of sales from the time period in the area, is not a reason to ignore the sale or few sales that are in the area and from the time period.

When it comes time for an ECF to be applied to an appraisal, it is essential that the assessing officer who performed the appraisals for the ECF analysis is the same assessing officer who performs the final appraisal where the ECF is used. This helps ensure that consistent quality classifications and depreciation determinations will be used in the final appraisals compared to the quality classifications and depreciation determinations that were used in the ECF analysis. If an assessing officer uses an ECF developed from appraisals performed by another assessing officer, the assessing officer using the ECF should review the properties and appraisals used to determine the ECF in an effort to achieve consistency.

ECF analyses are to be retained on file to document the source of the ECF as well as its validity. In addition to documenting the ECF which is used, retaining the ECF analysis saves time and effort in the following year. If the second half of a two-year ECF analysis is reused, the County multipliers used in the analysis will need to be updated.

In some locations, only a few improved property sales may have occurred which could be used in an ECF analysis. ECF indications should be developed for these sales even if the sales will not be directly used to produce an ECF. In such cases, an ECF will have to be estimated and the ECF indications from the existing sales will provide support for the estimated ECF. An estimated ECF that contradicts available ECF indications will likely be difficult to defend. In many locations with insufficient improved sales, an assessing officer may have to analyze sales outside the ECF area, outside the assessment jurisdiction, or even outside the County to determine an ECF. In such cases, the assessing officer must exercise sound and defensible judgment in estimating an ECF. It is recommended that the assessing officer support the estimated ECF with testimony from knowledgeable market participants such as fee appraisers, realtors, etc.; with location adjustments similar to what would be used in a sales comparison approach appraisal; or with other factual evidence.

ECFs should generally be applied as calculated, meaning that if an ECF analysis of a sufficient number of representative parcels yields an ECF of 1.15, an ECF of 1.15 should be applied in the mass appraisal process. Assessors and equalization directors should be prepared to explain any departures from use of a calculated ECF. This is not to say that calculated ECFs should be used in all cases. As previously discussed, due to a lack of sales information in the time period and area, it may be necessary to estimate an ECF.

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Also, at a certain point, the number of sales used in an ECF analysis will be sufficient to reach a reliable conclusion. Up until that point, however, it may be preferable to round the calculated ECF, as shown in the following chart:

Parcel Number	Sale Date	(Verified) Sale Price	Estimated Value of Land and Land Improvements	Sale Value of Buildings	Cost New Less Depreciation of Buildings (After Applying County Multipliers)	Indicated Economic Condition Factor
01-01-156-003	5/19/2006	\$198,400	\$28,900	\$169,500	\$210,116	0.81
10-10-203-008	8/18/2006	\$300,000	\$14,300	\$285,700	\$312,863	0.91
16-17-161-017	8/31/2007	\$138,000	\$14,200	\$123,800	\$130,608	0.95
17-18-238-004	11/22/2007	\$815,000	\$108,900	\$706,100	\$821,519	0.86
TOTALS:				\$1,285,100	\$1,475,106	0.87
USE:						0.85

The preceding ECF analysis is from a rural County and contains four light industrial parcels from throughout the County. For purposes of this example, assume that an ideal number of parcels (i.e., the number of parcels that would result in a reliable ECF) for such an ECF analysis is ten or more parcels. Since only four parcels are used in the analysis and at least ten parcels are needed for reliable results, the results of the analysis are probably less precise than desired. Accordingly, it may be appropriate to round the calculated ECF of 0.87 to, say, 0.85.

Also, it may sometimes be necessary for an assessor to adjust an ECF calculated in the proper manner to match County equalization figures (so that the ratio for the local unit falls between 49.00 and 50.00 percent of true cash value for the property classification involved). After an assessor is convinced that the land values and ECFs are proper, resulting in uniform assessments, if such an adjustment is necessary, land values and ECFs should be adjusted by the same multiplier. If the adjustment is applied entirely, and improperly, to the ECFs (buildings), uniformity between assessments is sacrificed. Note that uniformity between parcels is the primary responsibility of the assessor. Determining the average level of assessment is the primary responsibility of the county equalization department.

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ECF CALCULATION EXERCISE

Complete the worksheet on the following page. Add the missing information from the appraisal record card provided for parcel 20-25-200-016 (on the two pages following the worksheet). Calculate the ECF for each parcel (round to two decimal places). Identify the parcel that is an outlier and remove it from the analysis (assume that further research reveals a reason that the parcel should not be included in the analysis). Calculate an ECF for each category of building. Check your answers in the addendum.

Parcel Number	(Verified) Sale Price	Estimated Value of Land and Land Improvements	Sale Value of Buildings	Cost New Less Depreciation of Buildings (After Applying County Multipliers)	Indicated Economic Condition Factor	Comments (Category of Building)
03-16-300-009	\$219,460	\$109,800	\$109,660	\$97,628		Farmhouse
20-06-100-004	\$155,000	\$61,400	\$93,600	\$75,550		Farmhouse
20-11-100-016	\$153,000	\$76,400	\$76,600	\$71,618		Farmhouse
20-22-400-014	\$300,000	\$158,900	\$141,100	\$82,446		Farmhouse
20-25-200-016						Farmhouse
20-27-300-002	\$239,900	\$163,300	\$76,600	\$70,191		Farmhouse
TOTALS:						Farmhouse
03-18-300-036	\$196,190	\$125,500	\$70,690	\$108,104		Modular
03-34-100-009	\$154,800	\$99,600	\$55,200	\$93,744		Modular
20-07-300-002	\$148,000	\$102,000	\$46,000	\$71,986		Modular
20-26-100-014	\$135,000	\$97,600	\$37,400	\$68,183		Modular
TOTALS:						Modular
03-10-200-020	\$261,400	\$147,700	\$113,700	\$127,645		Ranch
03-14-300-018	\$229,100	\$108,600	\$120,500	\$117,083		Ranch
03-20-100-010	\$189,300	\$95,600	\$93,700	\$102,356		Ranch
03-21-200-011	\$267,800	\$120,100	\$147,700	\$181,915		Ranch
03-32-300-004	\$143,900	\$67,000	\$76,900	\$89,498		Ranch
03-34-400-008	\$248,950	\$104,700	\$144,250	\$191,213		Ranch
20-13-200-009	\$134,000	\$59,700	\$74,300	\$86,765		Ranch
20-13-200-044	\$130,000	\$64,300	\$65,700	\$78,044		Ranch
20-13-300-018	\$127,000	\$67,400	\$59,600	\$66,822		Ranch
20-14-100-006	\$121,500	\$60,500	\$61,000	\$68,500		Ranch
20-25-200-007	\$188,500	\$79,000	\$109,500	\$111,076		Ranch
20-27-400-010	\$300,000	\$83,300	\$216,700	\$218,364		Ranch
20-36-400-036	\$225,000	\$107,200	\$117,800	\$146,278		Ranch
TOTALS:						Ranch

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Parcel Number: -20-25-200-016

Jurisdiction: 2003 ECF

Printed on 07/18/2008

County:

Grantor ROBERT T	Grantee COSMO C	Sale Price 143,500	Sale Date 10/06/2006	Inst type WD	Terms of Sale Warranty Deed	Liber & Page 4590 29	Verified by	Prct Trans 0.0
Property Address BUNTON RD		Zoning: P.R.E. 100% 10/13/2006		Building Permit(s)		Date	Number	Status
Owner's Name/Address COSMO C		Map #: 2007 Est TCV 128,971 TCV/TFA: 141.42						
Taxpayer's Name/Address		Class: Residential		School: LINCOLN CONSOLIDATED				
<p>Legal Description *OLD SID - T 20-025-027-00 AU 25-41 COM AT NW COR OF SEC, TH S 375 FT IN W LINE OF SEC FOR PL OF BEG, TH DEFL 89 DEG 47'30" LEFT 400 FT, TH DEFL 89 DEG 47'30" RIGHT 125 FT, TH DEFL 90 DEG 12'30" RIGHT 400 FT, TH N 125 FT IN W LINE OF SEC TO PL OF BEG, BEING PART OF NW 1/4 SEC 25 T4S-R7E 1.14 AC.</p> <p>Comments/Influences</p>		<input checked="" type="checkbox"/> Improved <input type="checkbox"/> Vacant		Land Value Estimates for Land Table 07ERT.07 E.R.T. Description Frontage Depth * Factors * Rate %Adj. Reason Value 07 E.R.T. 2 ACRE SITE 2.00 Acres 33100 100 HOMESITE 66,200 07 E.R.T. ROW 0.10 Acres 0 100 ROW 07 E.R.T. -EXCESS ACRES 0.95 Acres -6400 100 - EXCESS -6,080 1.15 Total Acres Total Est. Land Value = 60,120				
		<input checked="" type="checkbox"/> Public Improvements Dirt Road Gravel Road Paved Road Storm Sewer Sidewalk Water Sewer Electric Gas Curb Street Lights Standard Utilities Underground Utils.		Land Improvement Cost Estimates Description Rate County Mult. Size %Good Cash Value D/W/P: 4in Ren. Conc. 4.21 1.00 168 75 530 Shed: Wood Frame 11.53 1.00 96 80 886 Total Estimated Land Improvements True Cash value = 1,416				
		Topography of Site <input checked="" type="checkbox"/> Level <input type="checkbox"/> Rolling <input type="checkbox"/> Low <input type="checkbox"/> High <input type="checkbox"/> Landscaped <input type="checkbox"/> Swamp <input type="checkbox"/> Wooded <input type="checkbox"/> Pond <input type="checkbox"/> Waterfront <input type="checkbox"/> Ravine <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Plain						
		who when what The Equalizer. Copyright (c) 1999 - 2000. Licensed to: Washtenaw County						
		Year	Land Value	Building Value	Assessed Value	Board of Review	Tribunal/Other	Taxable Value
		2007	30,060	34,426	64,486			47,037C
		2006	69,650		69,650			45,535S
		2005	72,350		72,350			43,911C
		2004	69,550		69,550			42,509C

Information herein deemed reliable but not guaranteed

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Printed on 07/18/2008

Parcel Number: T -20-25-200-016

Residential Building 1 of 1

Building Type		(3) Roof (cont.)		(11) Heating/Cooling			(15) Built-ins		(15) Fireplaces		(16) Porches/Decks		(17) Garage	
X Single Family Mobile Home Town Home Duplex A-Frame	X Eavestrough Insulation Front Overhang Other Overhang	0 0	(4) Interior Drywall Plaster Wood T&G Trim & Decoration	X Gas Wood	Oil Coal	Elec. Steam	Appliance Allow. Cook Top Dishwasher Garbage Disposal Bath Heater Hot Tub Unvented Hood Vented Hood Intercom Jacuzzi Tub Jacuzzi repl. tub Oven Microwave Standard Range Self Clean Range Sauna Trash Compactor Central Vacuum Security system	Interior 1 Story Interior 2 Story 2nd/3rd Same Stack Exterior 1 Story Exterior 2 Story Prefab 1 Story Heat Circulator Raised Hearth Wood Stove Direct-Vented Ga	Type Treated wood Treated wood	Year Built: Car Capacity: Class: C Exterior: Siding Brick Ven.: Stone Ven.: Common wall: Detache Foundation: 42 Inch Finished 7: Auto. Doors: Mech. Doors: Area: 960 % Good: Storage Area: No Conc. Floor:	Area 220 50	Size 912	Cost 55,048	
														X Forced Air w/o Ducts Forced Air w/ Ducts Electric Baseboard Elec. Ceil. Radiant Radiant (in-floor) Electric wall Heat Space Heater Wall/Floor Furnace Heat Pump No Heating/Cooling
Condition for Age: Good		Size of Closets Lg X Ord X Small Doors Solid X H.C.		Central Air wood Furnace		Stories Exterior 1 Story Siding		Foundation Crawl Space		Rate Bsmt-Adj Heat-Adj 68.46 -10.02 1.92		Size Cost 912 55,048		
Room List		(5) Floors Kitchen: Other:		No./Qual. of Fixtures X Ex. Ord. Min		(12) Electric Amps Service		Other Additions/Adjustments (14) Water/Sewer Public Water 2000 Gal Septic (16) Deck/Balcony Treated wood (17) Garages Class: C Exterior: Siding Foundation: 42 Inch (Unfinished) Base Cost Phy/Ab. Phy/Func/Econ/Comb. %Good= 70/100/100/100/70.0, Depr. Cost = ECF (2008 ECF TABLE)		Rate 1112.00 5000.00 65.95 10.25		Size Cost 1 1,162 1 5,000 220 1,529 50 513		
(1) Exterior Wood/shingle Aluminum/vinyl Brick		(6) Ceilings		No. of Elec. Outlets Many X Ave. Few		(13) Plumbing Average Fixture(s) 3 Fixture Bath 2 Fixture Bath Softener, Auto Softener, Manual Solar water Heat No Plumbing Extra Toilet Separate Shower Ceramic Tile Floor Ceramic Tile Wains Ceramic Tub Alcove Vent Fan								
X Insulation		(7) Excavation												
(2) Windows Many Ave. X Small X Large X Small		Basement: 0 S.F. Crawl: 912 S.F. Slab: 0 S.F. Height to Joists: 0.0		1										
Wood Sash Metal Sash Vinyl Sash Double Hung Horiz. Slide Casement Double Glass Patio Doors Storms&Screens		(8) Basement 8 Conc. Block Poured Conc. Stone Treated wood Concrete Floor												
(3) Roof Gable Hip Mansard Flat Shed		Recreation SF Living Walkout Doors No Floor SF		1		(14) Water/Sewer Public Water Public Sewer Water Well 1000 Gal Septic 2000 Gal Septic								
X Asphalt shingle		(10) Floor Support Joists: Unsupported Len: Chimney: Brick		1										
		Lump Sum Items:												

Information herein deemed reliable but not guaranteed

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ECF DETERMINATION QUIZ

- | | | | |
|-----|------|-------|---|
| 1. | TRUE | FALSE | The purpose of an ECF is to adjust the indication of value of a structure obtained via the cost approach to local market conditions. |
| 2. | TRUE | FALSE | Under no circumstances may an ECF be estimated. |
| 3. | TRUE | FALSE | It is not necessary to calculate an ECF if the most recent edition of the State Tax Commission <i>Assessor's Manual</i> is utilized. |
| 4. | TRUE | FALSE | An ECF converts the cost new less depreciation which results from the use of the <i>Assessor's Manual</i> to a true cash value estimate for structures in a local market. |
| 5. | TRUE | FALSE | When using the cost approach, ECFs must be determined and applied to all parcels improved with a building, including parcels with newly constructed buildings. |
| 6. | TRUE | FALSE | An ECF indicator for each improved sale parcel can be calculated by dividing the sale value of the building by the cost new less depreciation of the building as determined by the assessing officer. |
| 7. | TRUE | FALSE | A single ECF indicator (one sale) is sufficient to calculate a valid ECF. |
| 8. | TRUE | FALSE | Given sufficient sales information, the determination of an ECF is generally not a complex task. |
| 9. | TRUE | FALSE | Individual ECF indications are averaged (simple mean) to produce the overall ECF used in the mass appraisal process. |
| 10. | TRUE | FALSE | It is necessary to use of a sufficient number of sales to ensure the accuracy of an ECF determination. |
| 11. | TRUE | FALSE | It is a good practice to plot the individual ECF indications on a map of the ECF area. |
| 12. | TRUE | FALSE | An ECF is calculated by taking the total sale value of the buildings in the analysis and dividing that amount by the total depreciated cost of the buildings. |
| 13. | TRUE | FALSE | Generally, an ECF should be rounded to two decimal places. |
| 14. | TRUE | FALSE | Current County multipliers should always be used for all parcels in an ECF analysis. |

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- | | | | |
|-----|------|-------|--|
| 15. | TRUE | FALSE | Sales for an ECF analysis should generally be pulled from the same time frame used for a sales study performed to set the starting base for equalization purposes. |
| 16. | TRUE | FALSE | ECFs cannot be calculated for a group of properties based primarily on the structures' physical characteristics instead of the properties' geographic location. |
| 17. | TRUE | FALSE | In an ECF analysis, the effective age of buildings is to be determined as of the assessment date, not the date of sale. |
| 18. | TRUE | FALSE | An ECF should be used to value any item that has been flat valued. |
| 19. | TRUE | FALSE | It is important that the land values deducted from the sale prices in the ECF analysis be realistic and that the same land values be used in the final valuation of property that were used in the ECF analysis. |
| 20. | TRUE | FALSE | It is desirable for the individual ECF indications in an ECF analysis to be relatively consistent, although the degree of consistency can be expected to vary depending on the ECF area, the type of property involved, etc. |

Answers to this quiz are provided in the addendum.

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ADDENDUM

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MCL 211.27

211.27 “True cash value” defined; considerations in determining value; indicating exclusions from true cash value on assessment roll; subsection (2) applicable only to residential property; repairs considered normal maintenance; exclusions from real estate sales data; “present economic income” defined; applicability of subsection (4); value of transferred property; “purchase price” defined; net book value.

Sec. 27.

(1) As used in this act, “true cash value” means the usual selling price at the place where the property to which the term is applied is at the time of assessment, being the price that could be obtained for the property at private sale, and not at auction sale except as otherwise provided in this section, or at forced sale. The usual selling price may include sales at public auction held by a nongovernmental agency or person if those sales have become a common method of acquisition in the jurisdiction for the class of property being valued. The usual selling price does not include sales at public auction if the sale is part of a liquidation of the seller's assets in a bankruptcy proceeding or if the seller is unable to use common marketing techniques to obtain the usual selling price for the property. A sale or other disposition by this state or an agency or political subdivision of this state of land acquired for delinquent taxes or an appraisal made in connection with the sale or other disposition or the value attributed to the property of regulated public utilities by a governmental regulatory agency for rate-making purposes is not controlling evidence of true cash value for assessment purposes. In determining the true cash value, the assessor shall also consider the advantages and disadvantages of location; quality of soil; zoning; existing use; present economic income of structures, including farm structures; present economic income of land if the land is being farmed or otherwise put to income producing use; quantity and value of standing timber; water power and privileges; and mines, minerals, quarries, or other valuable deposits known to be available in the land and their value. In determining the true cash value of personal property owned by an electric utility cooperative, the assessor shall consider the number of kilowatt hours of electricity sold per mile of distribution line compared to the average number of kilowatt hours of electricity sold per mile of distribution line for all electric utilities.

(2) The assessor shall not consider the increase in true cash value that is a result of expenditures for normal repairs, replacement, and maintenance in determining the true cash value of property for assessment purposes until the property is sold. For the purpose of implementing this subsection, the assessor shall not increase the construction quality classification or reduce the effective age for depreciation purposes, except if the appraisal of the property was erroneous before nonconsideration of the normal repair, replacement, or maintenance, and shall not assign an economic condition factor to the property that differs from the economic condition factor assigned to similar properties as defined by appraisal procedures applied in the jurisdiction. The increase in value attributable to the items included in subdivisions (a) to (o) that is known to the assessor and excluded from true cash value shall be indicated on the assessment roll. This subsection applies only to residential property. The following repairs are considered normal maintenance if they are not part of a structural addition or completion:

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- (a) Outside painting.
- (b) Repairing or replacing siding, roof, porches, steps, sidewalks, or drives.
- (c) Repainting, repairing, or replacing existing masonry.
- (d) Replacing awnings.
- (e) Adding or replacing gutters and downspouts.
- (f) Replacing storm windows or doors.
- (g) Insulating or weatherstripping.
- (h) Complete rewiring.
- (i) Replacing plumbing and light fixtures.
- (j) Replacing a furnace with a new furnace of the same type or replacing an oil or gas burner.
- (k) Repairing plaster, inside painting, or other redecorating.
- (l) New ceiling, wall, or floor surfacing.
- (m) Removing partitions to enlarge rooms.
- (n) Replacing an automatic hot water heater.
- (o) Replacing dated interior woodwork.

(3) A city or township assessor, a county equalization department, or the state tax commission before utilizing real estate sales data on real property purchases, including purchases by land contract, to determine assessments or in making sales ratio studies to assess property or equalize assessments shall exclude from the sales data the following amounts allowed by subdivisions (a), (b), and (c) to the extent that the amounts are included in the real property purchase price and are so identified in the real estate sales data or certified to the assessor as provided in subdivision (d):

- (a) Amounts paid for obtaining financing of the purchase price of the property or the last conveyance of the property.
- (b) Amounts attributable to personal property that were included in the purchase price of the property in the last conveyance of the property.
- (c) Amounts paid for surveying the property pursuant to the last conveyance of the property. The legislature may require local units of government, including school districts, to submit reports of

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revenue lost under subdivisions (a) and (b) and this subdivision so that the state may reimburse those units for that lost revenue.

(d) The purchaser of real property, including a purchaser by land contract, may file with the assessor of the city or township in which the property is located 2 copies of the purchase agreement or of an affidavit that identifies the amount, if any, for each item listed in subdivisions (a) to (c). One copy shall be forwarded by the assessor to the county equalization department. The affidavit shall be prescribed by the state tax commission.

(4) As used in subsection (1), “present economic income” means for leased or rented property the ordinary, general, and usual economic return realized from the lease or rental of property negotiated under current, contemporary conditions between parties equally knowledgeable and familiar with real estate values. The actual income generated by the lease or rental of property is not the controlling indicator of its true cash value in all cases. This subsection does not apply to property subject to a lease entered into before January 1, 1984 for which the terms of the lease governing the rental rate or tax liability have not been renegotiated after December 31, 1983. This subsection does not apply to a nonprofit housing cooperative subject to regulatory agreements between the state or federal government entered into before January 1, 1984. As used in this subsection, “nonprofit cooperative housing corporation” means a nonprofit cooperative housing corporation that is engaged in providing housing services to its stockholders and members and that does not pay dividends or interest upon stock or membership investment but that does distribute all earnings to its stockholders or members.

(5) Beginning December 31, 1994, the purchase price paid in a transfer of property is not the presumptive true cash value of the property transferred. In determining the true cash value of transferred property, an assessing officer shall assess that property using the same valuation method used to value all other property of that same classification in the assessing jurisdiction. As used in this subsection, “purchase price” means the total consideration agreed to in an arms-length transaction and not at a forced sale paid by the purchaser of the property, stated in dollars, whether or not paid in dollars.

(6) For purposes of a statement submitted under section 19, the true cash value of a standard tool is the net book value of that standard tool as of December 31 in each tax year as determined using generally accepted accounting principles in a manner consistent with the established depreciation method used by the person submitting that statement. The net book value of a standard tool for federal income tax purposes is not the presumptive true cash value of that standard tool. As used in this subsection, “standard tool” means that term as defined in section 9b.

History: 1893, Act 206, Eff. June 12, 1893 ;-- CL 1897, 3850 ;-- CL 1915, 4021 ;-- CL 1929, 3415 ;-- CL 1948, 211.27 ;-- Am. 1951, Act 210, Eff. Sept. 28, 1951 ;-- Am. 1964, Act 275, Eff. Aug. 28, 1964 ;-- Am. 1965, Act 409, Imd. Eff. Nov. 3, 1965 ;-- Am. 1969, Act 276, Imd. Eff. Aug. 11, 1969 ;-- Am. 1973, Act 109, Eff. Dec. 31, 1973 ;-- Am. 1976, Act 293, Imd. Eff. Oct. 26, 1976 ;-- Am. 1976, Act 411, Imd. Eff. Jan. 9, 1977 ;-- Am. 1978, Act 25, Imd. Eff. Feb. 21, 1978 ;-- Am. 1982, Act 539, Eff. Mar. 30, 1983 ;-- Am. 1983, Act 254, Imd. Eff. Dec. 29, 1983 ;-- Am. 1985, Act 200, Imd. Eff. Dec. 27, 1985 ;-- Am. 1989, Act 283, Imd. Eff. Dec. 26, 1989 ;-- Am. 1994, Act 415, Imd. Eff. Dec. 29, 1994 ;-- Am. 2002, Act 744, Imd. Eff. Dec. 30, 2002 ;-- Am. 2003, Act 274, Imd. Eff. Jan. 8, 2004

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Constitutionality: For the purpose of assessing taxes on real property, to the extent that creative financing represents something of value either to a seller or a buyer, it is not part of the real property, and cannot be included in the determination of the true cash value of the property. *Washtenaw County v State Tax Commission*, 422 Mich 346; 373 NW2d 697 (1985).

Popular Name: Act 206

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STATE TAX COMMISSION BULLETIN NO. 6 OF 2007

855 (Rev. 1-03)



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TREASURY
LANSING

ROBERT J. KLEINE
STATE TREASURER

**BULLETIN NO. 6
AUGUST 15, 2007
FORECLOSURE GUIDELINES**

TO: Assessing Officers and County Equalization Directors
FROM: State Tax Commission
RE: Guidelines for Foreclosure Sales

Market sale transactions for real property are used by Michigan assessors and equalization directors to compare the assessor's assessments of particular properties that have sold in arms-length transactions with the actual sale prices for those same properties. The average ratio between the assessments and the sale prices should be 50%, since the assessment of the property should be at 50% of true cash value, as required by MCL 211.27a. However, since the market for real estate constantly changes, the average ratio actually found will usually not be 50%. In such cases, the county equalization director will require the assessor to adjust his or her level of assessment the next year so that the 50% ratio is reestablished. Further, within each local assessment jurisdiction, the assessor must conduct similar ratio studies to determine the levels of assessment in the various neighborhoods or sub-markets in the jurisdiction.

The proper selection of sales for inclusion in these ratio studies is critically important to the development of uniform and accurate assessments. The State Tax Commission has established guidelines to be used when reviewing sales for sales-ratio studies. The purpose of the guideline is to provide direction when compiling a "desk-reviewed" sales study. Desk-review means determining whether a particular sale will be used in a study based on transfer documents and other information in the office without additional investigation or field inspection.

Deviation from the guidelines should be based on investigation of the transaction beyond the normal steps of a desk review process. The recent increase in foreclosures has caused those transactions to have an impact on the real estate market in some parts of the state. While the following guidelines are specifically addressed to foreclosure sales, similar steps should be used in determining the use of any sale that would normally be excluded from study in a sales study.

GUIDELINES FOR FORECLOSURE SALES

- Sales to financial institutions are excluded from a sales ratio study unless the financial institution is using the property for its operations and it was not previously held as collateral.
- Sheriff's deeds are not typically included in sales ratio studies.

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- If it is determined that sales from financial institutions are open market transactions the sales may be used if they have been verified.
- All sales must be analyzed and verified to ensure they are arms-length transactions. The appropriate verification process contains but is not limited to:
 1. A determination as to whether the type of sale being reviewed is a measurable portion of the market.
 2. A determination that the sale property was properly exposed to the market. For example, by listing with a real estate company.
 3. A physical inspection of the property to make a determination that the assessment reflects the condition of the property at the time of sale unless the condition can be verified by other means.
 4. Receipt of a properly completed real property statement to determine the terms and conditions of the sale unless adequate alternative statistical procedures are utilized to ensure the sales are an adequate part of the market.
 5. A determination that the parties to the transaction were not related and each was acting in their own best interest.
- Additional analysis specific to foreclosure transactions:
 1. Was a market value appraisal obtained before listing?
 2. Did the seller have the right to refuse all offers?
 3. Did the property have full market exposure after governmental intervention?
 4. Was the property marketed for an adequate period of time?
 5. Whether the seller was obligated to prorate taxes in accordance with local custom and provide evidence of title and a warranty deed to the purchaser.
 6. Was property purchase “as is” and was property well maintained during the marketing period?
 7. Was purchaser supplied with a disclosure and/or lead paint statement?
 8. Did seller help with financing? If yes, then the sale must also be treated as a creative financed sale and be treated under the same rules established for adjusting creatively financed sales.
 9. Were concessions involved and if so, are they typical of market?
 10. Were sale conditions affected by the financial institutions requirement to dispose of the foreclosed property within 1 year to avoid the uncapping of taxable value or because of banking regulation conditions requiring special treatment of property owned by the institution?
- If a sale is used in the sales ratio study, it is also used to help determine land values and Economic Condition Factor’s.
- Counties and local units using “usually excluded sales” in a sales study for a particular period must maintain documentation of the verification process for each sale included in the study.

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- Once verified for use in a study, a sale is included in the study in the appropriate year in the same manner as all other sales used in the study.
- Please note that if the foreclosing institution is also financing the sale for the new owner, the property is subject to analysis for creative financing as outlined in State Tax Commission Bulletin 11 of 1985.

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TIME ADJUSTMENT DETERMINATION EXERCISE ANSWERS

Below are two twice-sold parcels which have been discovered through research. Fill in the blanks.

Original sale price (September 1, 1999):	\$225,000 (A)
Sale price of same property (April 1, 2004):	\$305,000 (B)
Percentage change in value between sales ($B \div A = C$):	<u>1.356, 35.6%</u> (C)
Percentage change in value per month:	<u>0.65%</u> (D)

Original sale price (December 10, 2001):	\$325,000 (A)
Sale price of same property (March 11, 2003):	\$355,000 (B)
Percentage change in value between sales ($B \div A = C$):	<u>1.092, 9.2%</u> (C)
Percentage change in value per month:	<u>0.61%</u> (D)

Additional question: The paired-sales analyses above are of commercial parcels in a given assessing unit. Would it be appropriate to use a time adjustment determined from the above analyses for industrial parcels within that same assessment unit? Why or why not?

No. Market conditions typically affect industrial properties differently than commercial properties. It would not be appropriate to use a time adjustment determined above from commercial parcels for industrial parcels within that same assessment unit.

Additional question: The paired-sales analyses above are from the time period September 1999 to April 2004. Would it be appropriate to apply a time adjustment determined from the analyses above to a sale that occurred in March of 2004 to bring that sale forward to April of 2007? Why or why not?

No. Market conditions between April of 2004 and April of 2007 may well have been different than the market conditions covered by the paired-sales analyses (the last sale in the analyses occurred in April of 2004). It would not be appropriate to apply a time adjustment determined above to a sale that occurred in March of 2004 to bring that sale forward to April of 2007 without additional support of some kind from the market or from market participants.

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LAND VALUE DETERMINATION QUIZ ANSWERS

- | | | | |
|-----|-------------|--------------|---|
| 1. | TRUE | FALSE | Land values are usually obvious for any given area. |
| 2. | TRUE | FALSE | Vacant land sales information may be used by an assessor without verification to set land values. |
| 3. | TRUE | FALSE | The highest and best use of vacant land sales needs to be considered by an assessor or an equalization department in using those sales to set land values. |
| 4. | TRUE | FALSE | It is not necessary to remove the area lying under a public road right-of-way when determining the sale price per square foot of a sale parcel. |
| 5. | TRUE | FALSE | Outlier sales usually warrant additional investigation before they are used to determine land values. |
| 6. | TRUE | FALSE | If sales from outside the normal time frame of the sales study period are used to determine land values, adjustment for market conditions should be made to bring the sales to the midpoint of the sales study period. |
| 7. | TRUE | FALSE | If sales from outside the area for which land values are being determined are used to set land values, adjustment for location should be made. |
| 8. | TRUE | FALSE | When using the front foot as the unit of comparison, it is not necessary to also use a depth factor. |
| 9. | TRUE | FALSE | Adjustments applied to vacant land sales for location, to bring the sales into the proper time frame, etc. should be derived from the market. |
| 10. | TRUE | FALSE | When determining an adjustment for time, a single paired-sales analysis is generally not considered sufficient to justify the adjustment of older sales information to the mid point of the current sales study period. |
| 11. | TRUE | FALSE | In the extraction method, the assessing officer first determines a typical ratio of land value to total value for the specific type of property being appraised and then infers land value for the subject properties by applying that ratio. |
| 12. | TRUE | FALSE | Land lying under a public road right-of-way is exempt from taxation. |

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13. **TRUE** FALSE In situations where there is a lack of sales information, along with sales of vacant land, an assessing officer could also consider asking prices to help establish land values.
14. **TRUE** FALSE Location is considered an environmental force when considering a parcel's characteristics.
15. Using the formula, $\text{Depth factor} = \sqrt{\text{actual lot depth} \div \text{standard lot depth}}$, compute each depth factor and equivalent frontage and enter those amounts in the chart below. The standard depth for this exercise is 120 feet.

Lot Width	Actual Depth	Depth Factor	Equivalent Frontage
80	150	1.118	89.44
70	135	1.061	74.27
50	125	1.021	51.05
60	120	1.000	60.00
80	115	0.979	78.32

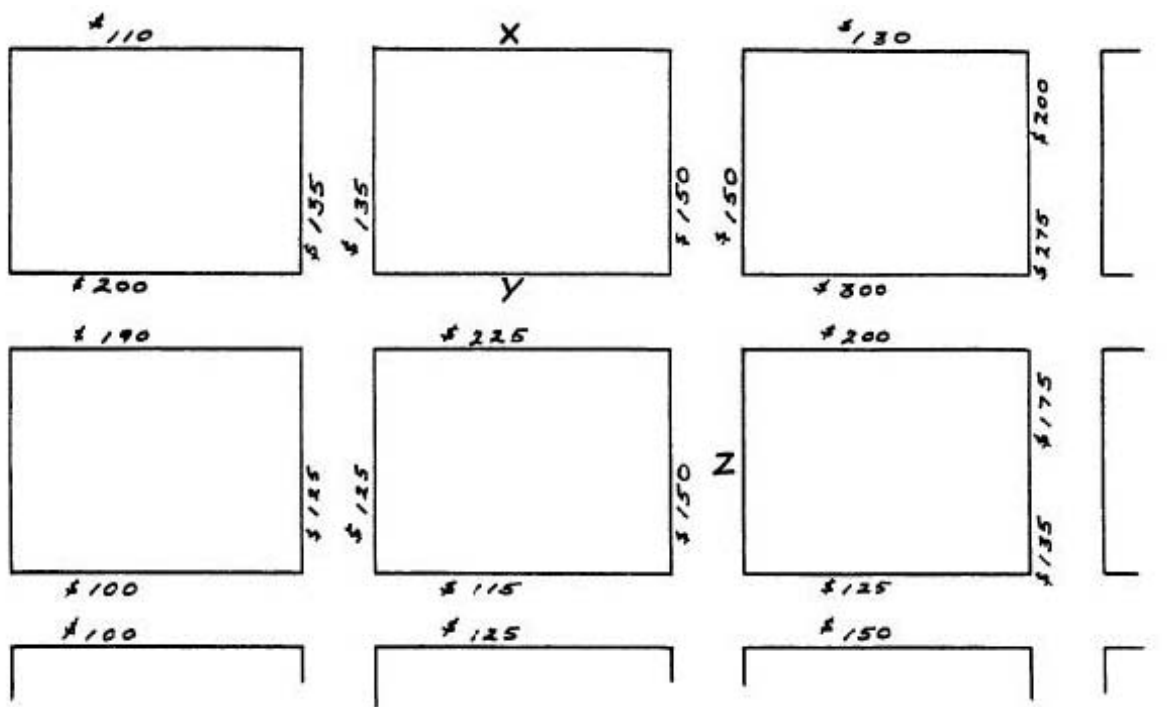
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LAND VALUE MAP QUIZ ANSWERS

1. Using the following sales information, indicate on the map located on the next page a sale price per front foot for each sale. To determine the sale price per front foot, first divide the sale price by the front feet in each lot (frontage provided). The result will be the first step in developing a land value map for this area. The next step would be determining an appropriate amount per front foot to use in setting land values for this area and then that amount would be entered onto the land value map.

<u>Lot Number</u>	<u>Sale Price</u>	<u>Front Feet</u>	<u>Sale Price Per Front Foot</u>
2	\$18,500	206.16	90
3	\$20,000	202.01	99
8	\$23,000	188.54	122
16	\$18,000	200.00	90
21	\$24,000	200.59	120
30	\$21,000	200.20	105
35	\$23,000	257.56	89
49	\$19,000	177.80	107

2. In the sketch below, sales were not available for those areas designated as X, Y, and Z. An appropriate value per front foot for area **X is \$120** based on adjacent land value conclusions. Determine an appropriate estimate of value (per front foot) for areas Y and Z based on adjacent land value conclusions. **ANSWERS: Y = \$250, Z = \$150**



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| 3. | TRUE | FALSE | Tax maps can be used as land value maps without modifying the tax maps. |
| 4. | TRUE | FALSE | It is not necessary to document land value determinations if an assessor can recall values of property in the local unit. |
| 5. | TRUE | FALSE | A graphical picture of land values (i.e., a land value map) assists the assessor in justifying assessments to taxpayers. |
| 6. | TRUE | FALSE | Creating land value maps helps an assessor observe land value trends in the local unit. |
| 7. | TRUE | FALSE | It is a good assessing practice to maintain maps that show both land sales information and the corresponding value conclusions reached by assessors. |
| 8. | TRUE | FALSE | Land value maps are nice to have but are not required by law. |
| 9. | TRUE | FALSE | There is no standard form for land value maps; land value maps can come in different formats depending on the circumstances. |
| 10. | TRUE | FALSE | An assessor may create different land value maps for different property classes (e.g., agricultural, residential, etc.). |
| 11. | TRUE | FALSE | For a suburban residential lot, appropriate units of comparison include the front foot, the square foot, and a site or lot value. |
| 12. | TRUE | FALSE | For a commercial shopping center property, an appropriate unit of comparison is a site or lot value. |
| 13. | TRUE | FALSE | Tillable agricultural land should be valued using the front foot as the unit of comparison. |
| 14. | TRUE | FALSE | Industrial parcels are generally valued using the square foot as the unit of comparison. |
| 15. | TRUE | FALSE | Timber land is typically valued using the acre as the unit of comparison. |

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ECF CALCULATION EXERCISE ANSWERS

Complete the worksheet below. Add the missing information from the appraisal record card provided for parcel 20-25-200-016. Calculate the ECF for each parcel (round to two decimal places). Identify the parcel that is an outlier and remove it from the analysis (assume that further research reveals a reason that the parcel should not be included in the analysis). Calculate an ECF for each category of building.

Parcel Number	(Verified) Sale Price	Estimated Value of Land and Land Improvements	Sale Value of Buildings	Cost New Less Depreciation of Buildings (After Applying County Multipliers)	Indicated Economic Condition Factor	Comments (Category of Building)
03-16-300-009	\$219,460	\$109,800	\$109,660	\$97,628	1.12	Farmhouse
20-06-100-004	\$155,000	\$61,400	\$93,600	\$75,550	1.24	Farmhouse
20-11-100-016	\$153,000	\$76,400	\$76,600	\$71,618	1.07	Farmhouse
20-22-400-014	\$300,000	\$158,900	\$141,100	\$82,446	1.71	Farmhouse
20-25-200-016	\$143,500	\$61,500	\$82,000	\$67,435	1.22	Farmhouse
20-27-300-002	\$239,900	\$163,300	\$76,600	\$70,191	1.09	Farmhouse
TOTALS:			\$438,460	\$382,422	1.15	Farmhouse
03-18-300-036	\$196,190	\$125,500	\$70,690	\$108,104	0.65	Modular
03-34-100-009	\$154,800	\$99,600	\$55,200	\$93,744	0.59	Modular
20-07-300-002	\$148,000	\$102,000	\$46,000	\$71,986	0.64	Modular
20-26-100-014	\$135,000	\$97,600	\$37,400	\$68,183	0.55	Modular
TOTALS:			\$209,290	\$342,017	0.61	Modular
03-10-200-020	\$261,400	\$147,700	\$113,700	\$127,645	0.89	Ranch
03-14-300-018	\$229,100	\$108,600	\$120,500	\$117,083	1.03	Ranch
03-20-100-010	\$189,300	\$95,600	\$93,700	\$102,356	0.92	Ranch
03-21-200-011	\$267,800	\$120,100	\$147,700	\$181,915	0.81	Ranch
03-32-300-004	\$143,900	\$67,000	\$76,900	\$89,498	0.86	Ranch
03-34-400-008	\$248,950	\$104,700	\$144,250	\$191,213	0.75	Ranch
20-13-200-009	\$134,000	\$59,700	\$74,300	\$86,765	0.86	Ranch
20-13-200-044	\$130,000	\$64,300	\$65,700	\$78,044	0.84	Ranch
20-13-300-018	\$127,000	\$67,400	\$59,600	\$66,822	0.89	Ranch
20-14-100-006	\$121,500	\$60,500	\$61,000	\$68,500	0.89	Ranch
20-25-200-007	\$188,500	\$79,000	\$109,500	\$111,076	0.99	Ranch
20-27-400-010	\$300,000	\$83,300	\$216,700	\$218,364	0.99	Ranch
20-36-400-036	\$225,000	\$107,200	\$117,800	\$146,278	0.81	Ranch
TOTALS:			\$1,401,350	\$1,585,559	0.88	Ranch

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ECF DETERMINATION QUIZ ANSWERS

- | | | | |
|-----|-------------|--------------|---|
| 1. | TRUE | FALSE | The purpose of an ECF is to adjust the indication of structure value obtained via the cost approach to local market conditions. |
| 2. | TRUE | FALSE | Under no circumstances may an ECF be estimated. |
| 3. | TRUE | FALSE | It is not necessary to calculate an ECF if the most recent edition of the State Tax Commission <i>Assessor's Manual</i> is utilized. |
| 4. | TRUE | FALSE | An ECF converts the cost new less depreciation which results from the use of the <i>Assessor's Manual</i> to a true cash value estimate for structures in a local market. |
| 5. | TRUE | FALSE | When using the cost approach, ECFs must be calculated and applied to all parcels improved with a building, including parcels with newly constructed buildings. |
| 6. | TRUE | FALSE | An ECF indicator for each improved sale parcel can be calculated by dividing the sale value of the building by the cost new less depreciation of the building as determined by the assessing officer. |
| 7. | TRUE | FALSE | A single ECF indicator (one sale) is sufficient to calculate a valid ECF. |
| 8. | TRUE | FALSE | Given sufficient sales information, the determination of an ECF is generally not a complex task. |
| 9. | TRUE | FALSE | Individual ECF indications are averaged (simple mean) to produce the overall ECF used in the mass appraisal process. |
| 10. | TRUE | FALSE | It is necessary to use of a sufficient number of sales to ensure the accuracy of an ECF determination. |
| 11. | TRUE | FALSE | It is a good practice to plot the individual ECF indications on a map of the ECF area. |
| 12. | TRUE | FALSE | An ECF is calculated by taking the total sale value of the buildings in the analysis and dividing that amount by the total depreciated cost of the buildings. |
| 13. | TRUE | FALSE | Generally, an ECF should be rounded to two decimal places. |
| 14. | TRUE | FALSE | Current County multipliers should always be used for all parcels in an ECF analysis. |

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| 15. | TRUE | FALSE | Sales for an ECF analysis should generally be pulled from the same time frame used for a sales study performed to set the starting base for equalization purposes. |
| 16. | TRUE | FALSE | ECFs cannot be calculated for a group of properties based primarily on the structures' physical characteristics instead of the properties' geographic location. |
| 17. | TRUE | FALSE | In an ECF analysis, the effective age of buildings is to be determined as of the assessment date, not the date of sale. |
| 18. | TRUE | FALSE | An ECF should be used to value any item that has been flat valued. |
| 19. | TRUE | FALSE | It is important that the land values deducted from the sale prices in the ECF analysis be realistic and that the same land values be used in the final valuation of property that were used in the ECF analysis. |
| 20. | TRUE | FALSE | It is desirable for the individual ECF indications in an ECF analysis to be relatively consistent, although the degree of consistency can be expected to vary depending on the ECF area, the type of property involved, etc. |

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SIX-HOUR CERTIFICATION RENEWAL PROGRAM EVALUATION

**LAND VALUES, LAND VALUE MAPS,
AND ECONOMIC CONDITION FACTORS**

At the conclusion of the program, please take a few moments to rate the program materials and the instructor. Also, please provide your comments regarding these items and the program location. Your input will be considered in improving the program for future students and in developing future renewal programs.

Your name (optional):

Your level of certification:

Location:

Instructor(s):

How would you rate the program materials (please circle one)?

Excellent

Good

Average

Fair

Poor

How would you rate the instructor(s) (please circle one)?

Excellent

Good

Average

Fair

Poor

Comments:
